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Methods for encouraging positive worker attitude and behavior toward change were examined to provide a basis for re-evaluation of current policies and programs relating to introduction of technological changes. The literature reviewed is presented in sections of: (1) "The Worker and the Occupational System," by Claude Durand, (2) "The Worker and the Organisational System," by Alfred Willener, (3) "The Worker and the Decision-Making System," by Alain Touraine, and (4) "The Worker and the Community," by Daniel Pecaut. Some general conclusions were: (1) A change is rarely an event which can be isolated, (2) It is difficult to separate changes in work from evolution of work, or attitudes toward change from changes in attitudes, (3) Industrial evolution involves a greater autonomy by workers of the problems of execution, organization, and direction of work, (4) The study of workers' attitude with regard to change is inceptible to a more general analysis of policies of management, and (5) The nature, causes, and consequences of a change should be known by all those who undergo or participate in it. A 13-page bibliography is included. (DM)

INDUSTRIAL RELATIONS ASPECTS OF MANPOWER POLICY

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A. TOURAINE and Associates

workers' attitudes to technical change

ORGANISATION FOR ECONOMIC
CO-OPERATION AND DEVELOPMENT

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workers' attitudes to technical change

An integrated survey of research

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ORGANISATION FOR ECONOMIC
CO-OPERATION AND DEVELOPMENT

1965

The Organisation for Economic Co-operation and Development was set up under a Convention signed in Paris on 14th December 1960 by the Member countries of the Organisation for European Economic Co-operation and by Canada and the United States. This Convention provides that the O.E.C.D. shall promote policies designed:

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FOREWORD

Technical and economic change is visibly reflected at the work place by alterations, eliminations and additions of jobs for blue or white collar employees either in the factory or the office. The ease with which these changes will be made will in part be dependent upon the attitude of employees. Will they accept or acquiesce fully or with reservations, or reject and resist these changes?

For the promotion of the fundamental economic and social objectives of continuing economic growth and rising living standards for the population, it is important that these innovations be made as smoothly as possible with due consideration of the people involved. Policy-makers and administrators of an active manpower policy are therefore challenged to design policies, programmes, services and aids which will convert negative or resisting attitudes into positive or supporting ones. To achieve this objective both the initiators of change and the policy-makers should be conversant with " workers' attitudes toward change " and the tools available for realising a positive attitude and behaviour.

This information is vital both to the formulators of national and community, and enterprise policies and programmes. They should not only be both motivated by similar goals but should possess a common fund of knowledge and insights concerning workers' behaviour and attitudes which deter or facilitate the acceptance of change vital to the nation or the enterprise. The programmes in both spheres should supplement, complement and reinforce one another where it is essential. Failings in the programmes and services at the community or national levels will affect workers' attitudes in the workshop. Similarly, shortcomings in the programmes and policies for the enterprise may undo much of the contribution made by the public authorities or impose an even greater burden than envisaged upon the public adjustment programmes.

Sociologists have, over the last few decades, and particularly during the last 20 years, examined workers' attitudes toward change. The European Productivity Agency of the O.E.E.C. and the O.E.C.D. have sponsored two such field studies. The first related to attitudes of workers in the steel industry towards technological change[1]. The second, published by the O.E.C.D. under the title " Office Automation; Administrative and Human Problems ", reports the attitudes of non-manual workers to the introduction of computers in four different countries.[2]

The growing volume of field reports and reflective writings on this subject has presented policy-makers and practical administrators, both at the community and enterprise levels, with the severe problem of determining the major findings in this field. The evidence has been mounting but few efforts have been made to distil and integrate the conclusions. In fact the diversity of approaches and methods and problems studied has tended to restrict the use made of the full range of findings.[1]

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[1] *Steel Workers and Technical Progress. A Comparative Report on Six National Studies.* EPA Project No. 164, Industrial Version No. 2. European Productivity Agency of the O.E.E.C., Paris, June, 1959, pp. 65.

[2] SCOTT W. H.: " Office Automation: Administrative and Human Problems ", O.E.C.D., Paris, 1965, pp. 103.

The present volume is a contribution toward an integrated view of the conclusions to be drawn from the available studies. It seeks to provide a framework for considering the reports and writings so that they may become more accessible to public and enterprise officials dealing with manpower and industrial relations problems. It can therefore constitute a basis for the re-evaluation of current policies and programmes essential to effective operation in the area of facilitating the introduction of technical change.

While the report necessarily reviews the workers' reactions to specific innovations, the analysis recognizes a broad range of influences affecting the behaviour pattern. Attitudes and behaviour are conditioned by a number of different personal and social factors, in fact the whole life setting of an individual. In Section IV on " The Worker and the Community ", it is concluded that a general attitude receptive to change on the part of the workers will also favour a more favourable attitude in the workshop. In a social environment in which the consciousness of the community is strong and occupation and social lives are closely interwoven, as in a single-industry locality, resistance to change in either sphere is strong. On the other hand, individuals who identify with growth and diversified societies are likely to have less reservations about innovation. Individual attitudes toward change are affected by their personal expectations, which are conditioned by many factors such as age, sex, origin, religion and other individual and social characteristics. Most important in shaping the reaction to change is the degree of economic security which the worker feels. Similarly, innovations which do not break up individuals' occupational life or coincide with their expectations are likely to be less resisted than those which have a contrary effect.

As for the workplace, the book reports on the influence of the occupational, organisational and decision-making systems. Workers may react in any one case by withdrawal, which is negative and often destructive, and exert individual pressures for personal gains, collective pressures for group interests or direct labour action toward establishing some control over work or greater opportunities for personal expression at work. Attitudes at the job level focus the variety of influences. They are the immediate point of contact with innovation. It is therefore particularly important to management and to the students of change.

Section I considers the influence of the alterations in the nature of work such as the advance of mechanisation, automation, mass production and scientific management. It asks how have they altered workers' attitudes toward change? The stress is upon the increased fragmentation of work, the elimination of workers' control, the isolation of jobs, disintegration of the work team, and the substitution of personal and informal relations for occupational ones. The plant hierarchy replaces the job hierarchy. Automation has to date particularly tended to shift job controls to higher echelons in the organisation. As these alterations have occurred in the nature of jobs, workers have sought to preserve their former occupational status, prestige, autonomy and culture either through their unions or informal action. Tension has been created by the process of change itself.

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[1] Whyte W. F.: " A Field in Search of a Focus. " *Industrial and Labor Relations Review*, V. 18, No. 3, April 1965, pp. 305-322.

Unions are moving toward broader goals of higher income and greater participation in the decision-making process both within the enterprise and in the total social and economic system and more stress on workers' needs for greater career and professional fulfilment.

In Section II on " The Worker and the Organization System ", the author discusses methods or procedures for introducing change and their effects on attitudes. It concludes that the most effective method of winning support is by arranging for real and effective worker participation in the decision-making process concerning these changes, though the evidence indicates that in and by itself this approach does not necessarily assure smooth sailing for the innovation itself.

Another facet of experience which conditions attitudes is the effect of the change on the workers' role, status and power in the enterprise hierarchy. The timing and degree of worker involvement in the enterprise as well as the degree of group cohesion will significantly influence attitudes. The group itself may determine the individual's behaviour for him by its pressures. The constituted groupings of rationalized structures such as unions and management will formulate their views in the light of their own goals and values and thereby introduce new determinants of behaviour.

A worker's view of society and the development of technology plays an important part in shaping his reactions to a particular innovation. If he sees society as consisting of separate conflicting interests with the control in the hands of the upper strata and himself in an inferior position, he is more likely to resist change. On the contrary, views which are more mobile and progressive will favour acceptance of change.

This contrast of views of the society and their effect on attitudes is the centre of discussion in Section III on " The Worker and the Decision-Making System. " The results and purposes of technical change and the function of the firm as an intermediary between the worker and technical progress will tend to be conceived by employees from four different points of view: namely, liberalistic, voluntaristic, withdrawal or integration. They produce different behaviour patterns both for the individual and trade union and at the shop and general social levels. The first will lead to a willingness to negotiate and to engage in institutionalised conflict such as collective bargaining. The second will produce a preoccupation with national economic policy and claims at the national level. The third will lead to a programme of continuing interference, resistance, restrictions and strikes. The fourth may result in participation in the decision-making process looking toward the reconciliation of interests. The results will be visible in workers' behaviour at the shop level.

The book concludes that a change cannot be considered as a single isolated event. Similarly, workers' attitudes toward it are a result of a complex set of economic, political and social influences. In reviewing the past and projecting their insights into the future, the authors suggest that unions will seek a greater right to participate in the decision-making systems at all levels and will endeavour to provide workers with more opportunities for expressing their creative inclinations. The workers, they believe, look for a substantial degree of satisfaction in their desire for self-expression at the workplace itself. As these needs are achieved, unions and individuals will tend to deal more pragmatically and functionally and less ideologically with problems initiated by change.

As for management, it will have to decide on the type of firm structure it will favour. The major choices are between those which provide scope for employee initiative and those which insist on rigid relationships. The latter, which results in a more integrated organisation, will produce more resistance to change. The structure which management selects will therefore substantially affect worker reaction.

The answer provided by current research on workers' attitudes toward change is that there is no direct mechanical relationship between specific change and workers' reactions thereto. Therefore a close understanding of the multitude of forces and influences impacting upon the individual must be attained. The attitudes and behaviour are a consummate expression of these multitudinous forces, many of which are dealt with in this book: they include personal, environmental, job, organisational, general social attitudes, and formal and informal group influences. The policy-maker and administrator have to acquire increasing knowledge and sensitivity to their respective contents, to the manner in which they are achieved and to the ultimate effect they may have upon individual personal behaviour. On the basis of this knowledge, they must define the manner and schedule of changes.

The present analysis is part of a series of inquiries. It is to be followed by those dealing with actual techniques of adjustment developed by collective bargaining and management personnel practice respecting the introduction of technical change. The purpose of these adjustment programmes is to secure maximum acceptance and acquiescence of employees to these changes with minimum personal cost. It is hoped that it may also lead to direct initiative by employees in promoting change.

The programme of studies provides a basis for reviewing enterprise programmes and for achieving greater integration between them and the public active manpower policies and programmes.

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PREFACE

Are changes regarded merely as everyday events in the life of a firm? Are the favourable or unfavourable reactions of workers governed solely by their assessment of the favourable or unfavorable consequences of the change?

One of the major tasks of industrial sociology is to refute these over-simplified propositions and to remind us that changes cannot be divorced from the system of organisation in which they are applied, and that they are at the same time the manifestation of an economic and social policy which the workers judge in the light of the changes themselves.

It would be a dangerous mistake to think that the more limited concept of technical change and of attitudes towards it makes it easier to put forward practical recommendations. Long experience has shown the vanity of thinking of worker motivation in too simple terms. It must not be forgotten that one of the most important results of industrial sociology has been to demonstrate the comparative ineffectiveness of financial incentives. On the contrary, a clear distinction between the different levels of significance of change in the minds of workers makes it easier to define sound methods of introducing and implementing changes.

The purpose of this book is to introduce the main discoveries which have been made concerning workers' reaction to technical changes. Successive chapters deal with the worker as an operative, as a member of an organisation and of a system of social relations, as a wage earner or, in other words, as a person subject to someone else's powers of economic decision, and finally as a member of communities outside his work such as the family, the ethnic group, the town or the neighbourhood.

This book does not claim to cite and analyse all the existing works; it is not a systematic bibliography. Nor have we limited ourselves to defining the main current trends of sociological research in the sphere under review. We have sought rather to put forward the widest possible overall view of this field of study. This work is primarily addressed to all industrial sociologists in universities, business and in the public service, but we hope it will also be useful to businessmen, personnel experts and trade unionists, all of whom have to guide the attitude of workers towards change.

There is no longer any question today about the needs of workers or their motivations defined in general terms. Attitude and behaviour can only be understood in their concrete environment. Change is not a pure fact; it is the manifestation of intentions, social relations, economic necessities and political projects. Man does not react to change in the light of general principles or abstract values but in the light of the meaning which he attaches to the action of which he regards the change as a sign.

In the last analysis the study of attitudes to change cannot be separated from industrial psycho-sociology as a whole. It is nevertheless valuable to treat this subject as a special one so as to appreciate more fully, by means of a specific example, the movement of sociological research and the slow progress it has made in considering all the aspects of the social situation of workers and thus to explain their response to each aspect of their work.

The present report is a progress report on the state of research in a specific field but it is also designed to be used as a concrete introduction to industrial sociology.

Alain TOURAINE

INTRODUCTION

INTRODUCTION

The theme of this report is to consider the recent predominant areas of interest in industrial sociology. Indeed, so much research has been conducted on workers' attitudes in relation to their work situation that the student might almost be tempted to believe that industrial sociology, or at least the social psychology of industry, consists in the examination of workers' attitudes and related behaviour.

Sociological analysis starts when the scholar answers the question, " What happens when some particular aspect of the work situation is changed? " by saying that, put in this way the question is meaningless because human behaviour is not a direct response to non-social stimuli. This was the historic starting point of the well-known studies made in the Hawthorne Plant by the Harvard Business School team, and later also of those made by researchers of the Tavistock Institute at the Glacier Metal Company. In the first case, the event studied concerned equipment—an alteration in the lighting of a workshop; in the second case it appeared to be more social in nature — a change in the system of payment. But in both cases, as in many others, the sociologist concluded that between the events and the workers' reactions to them, their whole social life came into play: attitudes, membership groups, reference groups, systems of communication, social relations, power and authority relations.

This conclusion that there is no direct or quasi-mechanical link between material conditions of work and social behaviour re-appears in another form in the extensive research carried out by the Survey Research Centre of the University of Michigan. Here, however, the enquiry started from attitudes and work satisfaction and tried to determine their effects on productivity and the results of work. The finding (which was all the more important because it was contrary to widespread belief) was that there is no direct or continuous link between work satisfaction and productivity. Attitudes towards work must be considered as autonomous elements subject to their own system of logic, and not as a subjective reflection of the objective manner in which work organisations function.

It would be easy to cite further results, as a considerable volume of study has followed up the basic studies of the approaches just mentioned. The most widely known research concerns workers' responses to financial incentives. These studies range from " Management and the Worker " and the research of the Whyte-Dalton-Roy group, to the work of Lutz, Willener and Durand under the auspices of the European Coal and Steel Community and the parallel studies of Bolle de Bal, Dejean and Mottez.

It is clear today that the behaviour associated with a payment system is not directly related to the technical situation. It is also clear that workers do not respond simply in terms of the utilitarian logic of stimuli. There is no direct channel of response from the work situation to work performance or vice versa.

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This insight is a necessary starting point for any sociological thought applied to work problems. It eliminates, at the same time, both the pessimistic view that the worker is manipulated by external hostile influences or by technical and economic compulsions and the optimistic view that when the workers are satisfied, the firm is functioning well. The problem, therefore, is to establish new relationships between attitudes and the work situation.

I. THREE TYPES OF ANALYSIS OF WORKERS' ATTITUDES

1. The first new approach is that of the social psychologist. It is purposely behaviouristic, applying learning theory in examining the conditions under which a certain behaviour is reinforced by rewards. An excellent example of this type of analysis is provided by N. Morse (1953). Drawing on Floyd H. Allport, this researcher defines six elements which, when combined, make specific behaviour patterns understandable:

1. the strength of the needs of which the behaviour is the outcome;
2. the probability that this outcome will gratify the needs;
3. the quantity of such behaviour required to reach a certain release in the tensions created by these needs;
4. the existence of other means of reducing the tensions created by these needs;
5. the quantity of behaviour required to reach, through such other means, a given unit of release in the tensions connected with these needs;
6. the probability that the individual wants to satisfy needs other than those which can be satisfied by the behaviour under consideration.

In more general terms, this approach examines decisions, and defines the elements of a calculation which certainly does not appear in monetary form. It does not correspond to " rationality " as conceived by the classic economists, but nevertheless implies a coherent system of evaluation of the elements involved in a decision.

2. This type of analysis can easily be extended to include a study of the influence of social relations on the individual who makes the decision (cf. Katz and Lazarsfeld, 1955). An individual's orientation towards an objective is influenced by the standards of his reference groups. This simple formula opens a vast field for social-psychological analysis. One example may suffice to make this point clear. A worker who is moving up the social scale does not behave in the same way as one who, tied by his social origins to the working class, considers himself fixed there for life. In the latter case, the norms which influence the individual most strongly are those of his actual membership group, often the primary work group to which he belongs. On the other hand, the individual in the first case is more sensitive to the norms of the group he wishes to enter as he climbs the social ladder, comparing them to the norms of his original group as well as to more abstract norms which appear to him to be those of an expanding and advancing society. Such influences have already been shown in the comparison made by Whyte's team between workers of Anglo-Saxon origin, Protestant and Republican, and others of foreign origin, Roman Catholic and Democratic. Members of the latter category were more observant of collective norms of output and of output restrictions imposed by the work group.

This perspective leads to an analysis of attitudes and work satisfaction in terms different from those mentioned before. One no longer starts from an equilibrium or lack of it between expectation and experience, or between the contribution made by the individual and the reward he obtains from a social situation. Nor can one use the more complex model proposed by N. Morse for the study of productivity. Behaviour must now be analysed in terms of the social system, and considered in terms of adjustment rather than of satisfaction.

At this point mention should be made of the concept of anomie (directly opposed to that of adjustment) as defined by Durkheim and more particularly as used by Merton (1957). In Merton's scheme, various types of behaviour can be distinguished, according to whether or not the individual adopts the cultural values and/or the institutional means (for the achievement of the cultural goals) involved in his action. If one views society in terms of the organisational structure or the social system, some deviant behaviour will be seen as intimately linked with a specific type of system. The idea of disfunction, also developed by Merton, encourages one to take this view. Routine behaviour and resistance to change are the logical and disfunctional attributes of a hierarchical, impersonal organisation, that is what Max Weber called bureaucracy.

Routine, then, no longer appears in a purely negative light. Without routine, a bureaucratic system would not work: it is its " inertia " in the engineering sense of the term. From this point of view, it is the presence of change rather than that of routine which poses the interesting problem. One either assumes that there are certain internal tendencies towards change in the social system, tendencies towards differentiation and heterogeneity, such as those which Durkheim and Tönnies have described, or that the rationally organised system comes under the influence of an irrational environment, which can itself be regarded either as " nature " or as a value system, whose Wertrationalität (rational submission to values), to use Weber's terms, is opposed to the Zweckrationalität (instrumental rationality) of the organised system.

This second approach to social attitudes focuses on the effects of the pathological character of certain social norms. Much behaviour can be interpreted—and Merton did this himself in " Mass Persuasion "—as responses to the inadequacy or decline of the prevailing cultural values or of the prescribed institutional means. Thus, a society which values individual success, as is the case in American society, may at the same time set large obstacles in the way of the social mobility of most individuals. Lipset and Bendix emphasized strongly that the mobility rate depends less on a society's values than on its technical and economic development, although both are closely related, at least in the industrialised countries of the West. Therefore more people in American society, which values personal success more than other societies, will experience a consciousness of failure, because more people will try to leave the manual occupations. This awareness of failure has to be understood not in terms of individual characteristics, but in terms of a disharmony between the cultural values and the institutional means.

3. Absence of norms or normlessness, however, can be interpreted in another way. It can be regarded, as Seeman (1959) did, as a special case of a broader phenomenon which many writers call alienation, without taking the trouble to define this concept clearly.

The merit of Seeman's analysis lies in his refusal to take the easy way out by using a very vague word. He distinguishes five different meanings of the concept: the feeling of having no control over the situation (powerlessness); the inability to give a meaning to the situation (meaninglessness); the normlessness, already mentioned; the impossibility of deriving gratification from the acceptance of the predominant values (isolation); and finally the subordination of conduct to reward systems alien to the personality (self-estrangement), this being connected with the loss of identity also to be found in Erich Fromm (1955), C. Wright Mills (1951) and David Riesman (1950).

These five dimensions probably do not belong to the same frame of reference. Some are attributes of the social situation. Others, more particularly powerlessness and self-estrangement, are related to the extent to which the person is conscious of himself as an individual. He cannot be conscious of himself unless he has some control over a situation which it is in his power to change or at least to affect, and this only to the extent that he believes his action to have originated from within and not exclusively from without. Here, Seeman picks up Rotter's theory of learning together with the important distinction established by the latter between internal and external control of reinforcements.

This approach does not by any means lead us back to our starting point. It is no longer a matter of establishing a balance or imbalance between expectation and reward, and therefore of satisfaction, but of the dynamic principle of " self-actualisation " or " self-realisation ", which many sociologists and psychologists from the young Marx to Fromm have frequently cited. It is not a philosophical principle. It is like any other principle of sociological analysis, the conceptual starting point of a system of analysis based on internal logic.

In the first type of analysis, the study of satisfaction, the principle was the relation between contribution and reward; in the second perspective, the study of adjustment, the principle was the relation between the norms and their being learned in the particular social system; and now, in the third type, concerning alienation, the analysis is based on the relation between the worker and what he does at work. This relationship is certainly not a simple one. Above all, it is not purely technical and occupational: the relation between the worker and what he produces cannot be isolated from the organisational and decision-making systems under which the work is done. We shall come back to this point later.

Comparison of the Three Types of Analysis

It is important to distinguish as clearly as possible between these three types of analysis and their corresponding social phenomena. For example, Neal and Rettig (1963) have shown, using factor analysis, that powerlessness and normlessness are distinct dimensions of alienation, not to be confused with anomie, in the current meaning of the word.

Using a special method adapted from Flanagan, Herzberg and his collaborators (1959) succeeded in distinguishing two types of situations: those which bring positive satisfaction and those which cause various degrees of dissatisfaction. On the one side there is the creative urge, and on the other the environment and the payment and disciplinary systems are more or less serious obstacles to the creative urge. They can easily be subjected to a Mertonian (anomie) analysis, at least in a society which places a general value on creativity.

These three types of analysis, based respectively on satisfaction, adjustment and alienation, do not necessarily imply preference for any particular variables in the study of attitudes towards work. It would be erroneous to believe that the study of satisfaction takes place only at the individual level, that of adjustment only at the work group level and that of alienation only at the level of larger groups, such as social classes. It would be still more inappropriate to conceive of the first as essentially conservative and of the second as reformist, while only the third would question the system of values and therefore the organisation of society.

On the other hand, the three types of analysis are not absolutely parallel. A certain degree of priority should be assigned to the concept of alienation, simply because it is possible to pass from this notion to the notions of adjustment and of satisfaction, while it is impossible to move in the opposite direction. It is logical to consider first how a worker interprets or gives meaning to his situation by comparing it with his own needs (for creativity and for control over his work), before considering the exigencies or needs of the social system itself. These are the result of institutionalisation: not of the meaning the worker attaches to his situation but of the general goals of a society, and of the systems of power and income distribution. As to the study of satisfaction, it is more directly connected to the study of personality and its means of adjusting to " frustrations ".

Two Complementary Viewpoints

This distinction between the various possible types of analysis does not always correspond, as already stated, to the various levels of social behaviour. This point should be stressed because, historically, industrial sociology has not developed according to the theoretical perspectives we have outlined but through a gradual widening of its outlook. During its development, industrial sociology was in fact rooted in the study of certain of the older industrial societies. Today we know that they were only special cases. Western, and more particularly European, industrialisation was dominated by competitive capitalism and, to be more precise, was characterised by the existence of very weak social controls of both the means and the results of economic development.

For this reason, industrial sociology, or the study of industrial social problems derived from the labour market and the pressure exerted on the workers by the economic conditions of production, was sensitive at first only to the " poverty " of the workers. It therefore alternated economic analyses with moral judgment. The social problems of work only became a subject of interest when the nature of this " primitive " industrialisation began to change.

It should be noted here that the nature of industrial societies has exerted considerable influence on the formulation of sociological problems. In the United States, the faster development of mass democracy and also of high wages — as well as a high degree of social mobility and the problems arising from immigration—have highlighted the special importance of the most concrete problems. In Europe, on the other hand, the persistence of a class system based on pre-industrial values and the slowness of industrial workers in gaining access to political influence and obtaining improvements in living standards explain why political claims have nearly always been the underlying force for trade union action.

As a result, two very different analytical approaches to work problems have developed. European sociological thought has always found the greatest difficulty in analysing problems relating to the job, the workshop or the firm, and more generally in framing a sociological approach as distinct from an economic analysis. American thought, on the contrary, being critical of Taylorian utilitarianism, has become progressively aware of the problems inherent in the group, the organisation and the social system, considering the worker first of all in his workshop, then in his firm and finally in society as a whole. The idea that the worker's behaviour could be explained by a series of concentric determinants, involving wider and wider social attachments, seems to be characteristic of the " American " approach, although many European sociologists have also followed it. It was, and still is, of great value, for it has enabled the work situation to be considered in all its aspects.

But the difficulties encountered in the other approach, which for convenience we shall call " European ", should not obscure its positive aspects. It rightly stresses that the worker, through his most immediate experience of work, is not only a machine operative and a member of a small group but also a principal claimant in society. Class relations are not confined to the level of the major social and political organisations; they also exist at the level of the individual worker's consciousness.

Restatement of the Problems

The problem should be restated, not in the old terms of a sociology of class conflicts but on the basis of the European intellectual tradition. Workers' attitudes are not only determined by satisfaction or dissatisfaction, adjustment or maladjustment, integration or anomie, but also by an effort towards, and a demand for freedom. This conclusion is not a moral or philosophical affirmation. It opens up the way to a principle of analysis which emphasizes the distance that still separates the worker from work groups and organisations and even from the affluent society. The workshop or the firm no longer appears to be merely an environment or a social system but also both an intermediary and a barrier between the worker and his work. This statement in no way denies the fact that the worker also behaves as a member of an organisation and at the same time regards himself as satisfied or dissatisfied. Much research has shown that active trade-unionists are often more satisfied and more integrated than other workers in their firm. The reverse, however, is also often true. The important thing is simply to distinguish several types of analysis.

This type of analysis based on European intellectual tradition, the importance of which we are now trying to stress, creates certain difficulties when applied to the study of workers' attitudes to changes affecting the work situation. When the worker is faced with a new situation, his adjustment to it will depend on how clearly he perceives the changes or to what extent he accepts the causes and consequences of the situation.

A change can be judged by a comparison, on the one hand between the work situation as it appears before and after the change, and on the other hand, since a change is generally limited in its scope, between the modified and the other unchanged aspects of the work situation. A single example will throw light on this point. Quite often, a firm attempts to modify the role of its foremen, but the role of the executives is very rarely changed at the same time. This gives rise to a discrepancy between the two levels of management, which is often a cause of increased dissatisfaction. Among other authors, Pelz (1952), has clearly shown that a foreman's efficiency largely depends on his ability to reduce such a discrepancy by influencing the executives. This type of analysis brings us back to the notion of adjustment, that is to say to the study of the functioning of the organisational system itself. The same line of approach is contained in Homans' now classic notion of the congruence of status, that is to say of consistency among the various factors which decide the status of an individual or of a group in the hierarchy of the firm.

On the other hand, from the point of view of alienation, that is to say of the need system of the worker, it is no longer possible to regard changes simply as modifications of working conditions. Two new ideas have to be introduced. On the one hand, the change affects the worker's creativeness; and on the other hand, by its results as well as its causes and by the manner in which it is introduced, it affects the worker's control over his working conditions. These two dimensions of the change are generally independent of one another. A change which raises the occupational level may nevertheless be poorly recieved because it is introduced in an authoritarian manner or, more broadly speaking, because it is decided upon by a management towards whom the workers are hostile. A change, therefore, has always a symbolic value; and because it is the result of a decision, it alters the relationships of power or influence.

On what, therefore, does the meaning of the change depend? To be more precise, why is this meaning more or less removed from the recognised concrete consequences of the change?

II. THE STUDY OF CHANGE

We are now reaching the central problem of the analysis, for the three perspectives that have been distinguished are all equally sensitive to the meaning of change in relation to the workers' needs. Those who study satisfaction will say that a change affects the balance of contributions and rewards; those who look for conditions of adjustment or anomie will show that a change affects the system of norms which govern working life, making it more or less clear, coherent, or in harmony with certain cultural values in the society under consideration. Finally, the student of alienation infers that this change affects the double role of the organisation of work as an intermediary and as a barrier, in other words, it affects what comes between the worker and his work. In passing from the first type of reasoning to the third, the change becomes gradually more symbolic in appearance; it is increasingly judged as a function, not by its direct consequences for the worker, but by its significance for the social relations of work.

In still simpler terms, judgments passed by the workers may be focused on the level of work operation, of its organisation or of its management. It is not a matter here of splitting up the problems in such a way as to contradict our earlier conclusions, but of saying that workers, in shaping their attitudes, may consider the work situation from several different points of view, favouring the one or the other level of social reality.

When we speak of satisfaction, changes are more important the more directly they affect the work operation, because the relation between the contribution and the reward of a worker is more easily evaluated at the level of individual activity (that is, of his work operation or occupational activity, and the remuneration and other types of environment returns which he expects from his activities). When we speak of adjustment or anomie, we consider the worker primarily as a member of groups or organisations. When we speak of alienation, we should indeed consider occupational activity or type of control as well as power relations. But it is this last level of work reality, the most general one, which governs all other responses.

It is not for the sociologist to choose the type of approach which suits him best. His role is rather to find the one which the workers whom he is studying choose themselves, and more generally, to inquire into the reasons for this choice.

Four degrees of involvement

We shall therefore distinguish four degrees of workers' involvement:

a) Withdrawal—the absence of personal involvement in the work situation;

b) Utilitarianism—seeking a just reward for the personal contribution made;

c) Solidarity—upholding the interests of a group or a category in an organisational system;

d) Labour action—oriented directly towards the development of creativity in work and of control by the workers over their working conditions.

The degree of workers' involvement will depend on two factors: their level of creativity and their judgments of the obstacles to control over their own work.

The level of creativity depends not only on the level of skill but equally on the nature of the work. When the trade or occupation can be described as involving the use of personal knowledge, independent of the organisation or society in which it is employed, a utilitarian outlook is more probable. The traditional skilled worker in the building trades for example, and also the expert employed by a large organisation but at the same time independent of it, both seek primarily to establish a relation between contribution and satisfactory reward; for both of them, satisfaction is the most important principle.

The worker, usually unskilled, who only wants a wage for his work and is not interested in the kind of work he does and still less in the problems of the firm, generally assumes a position of withdrawal.

The more closely the work is related to a system of communication and organisation, the greater is the chance of developing collective solidarity.

Finally, labour action based on essential claims and on an acute awareness of alienation can only develop when the work appears to manifest the values of the society directly, and particularly technical and economic development.

The types of obstacles encountered by the will to control, depend much less on the workers themselves than on the society to which they belong. The stronger the class relations in a society, the more absolute is the autocracy of the employers; and the more economic life appears to be oriented towards " private goals (which may be those of capitalists or of the State), the more the obstacles to control appear to be primarily " political ".

The American example is the reverse of that of a society in which the system of economic and political decision making is hardly questioned and in which the trade unions have succeeded—through collective bargaining and more particularly by means of grievance procedures and seniority clauses—in achieving a limitation of the employers' authority within the firm. In this case, job control is in the forefront. The example of the United Kingdom is at an intermediate level where the organisational problems of the firm appear to be the most important.

The relative Autonomy of the three Attitude Systems (Levels of Analysis)

It is at the level of the individual and of his calculation of satisfaction that sensitiveness to change is most nearly proportionate to its actual or anticipated consequences, and where reactions to change are most direct, spontaneous, and therefore malleable. At this level, therefore, it is comparatively easy by means of compensation to re-establish a balance that has been disturbed. Increased remuneration, improved physical working conditions or greater security of employment, for example, may compensate for a loss of skill.

At the level of organisation and of anomie, however, compensation intended to maintain or reinforce adjustment can no longer be solely in terms of the individual; a specific kind of change must lead to a specific kind of revision of the system of norms. An individual grievance, therefore, will not automatically turn into general discontent. Job evaluation may be quoted here as an example. The chief advantage of this technique is not that the skills for the job are defined with greater precision, but that they are translated into an organisation language. It is possible to clarify the hierarchy of jobs, and therefore promotions or transfers as well as the relationships of wages among various jobs. This example shows the price to be paid in passing to a more general level of attitudes.

A more favourable balance in terms of adjustment can lead to greater individual dissatisfaction. This appears still more clearly on passing to the third type of analysis. Here, the system of attitudes is more inflexible. It can reach a point where the workers' reactions appear to be governed by prejudice, or by a preconceived interpretation of the significance of the change: there is distrust on principle of any step taken by management. Such pessimism, for example, predominated in the replies given by workers in the French Steel Industry, interviewed during a survey made by Dofny, Durand, Reynaud and Touraine (1956).

Frequently, as a measure of protection againt managerial dominance, trade unions try to impose their system of bureaucratic rules. It diminishes the feeling of alienation but introduces additional rigidity into the plant, the price of which is greater difficulty in adjustment to the organisation and less satisfaction for the individual. Michel Crozier (1957) has studied a particularly clear case of this situation in the French tobacco factories.

These remarks show that satisfaction, adjustment and disalienation, far from mutually strengthening each other or forming different levels of the same process, each constitute a special way of dealing with work problems. They are fairly independent of each other so that success in one of them may at times only be obtained at the price of a set-back in the others. It must also be added, to take account of an earlier remark, that orientation towards satisfaction is associated with situations in which conflicts with the social aims of production are comparatively slight, and that orientation towards disalienation makes its appearance quite logically when such conflicts are embittered. As a result, social relations in the latter case are much more rigid than in the former. In the former case, limited and concrete problems can be handled in a definite manner by the foremen, the personnel representatives or the trade union section in the firm, while in the other case the problems are always pursued until they reach the top level. Here they become emotionally and idealogically charged. This rigidity, however, is not wholly a disadvantage; it can be extremely creative if it leads to the treatment of certain general problems of economic and social life which cannot, it would appear, be perceived or resolved by a more flexible and more liberal society.

A comparison can be made between the attitudes of the workers and especially of the trade unions in various countries in regard to the social consequences of automation or, even more simply in the Hearings of the United States Congress, between the statements made by Walter Reuther and those made by more conservative trade union leaders. As many European trade-unionists have done, Walter Reuther asked not merely for guaranteed employment but for a planned or integrated economic policy, stipulating more particularly that industries should be established in such a way as to mitigate the effects of the underemployment with which certain areas and industries were threatened as a result of technological change.

III. CONCLUDING REMARKS

Our purpose in this Introduction was to describe three different types of analysis of the study of attitudes towards work, the social reasons for their emergence, and their relations to each other both in the actual conditions under consideration and in sociological analysis. It would have been desirable to base this whole report on such a plan, but its purpose, mainly to present existing literature and research, rules this out. Moreover, many insurmountable practical difficulties would be encountered. It therefore seemed wiser to follow a plan which, though more modest, permits a presentation and an analysis which remain faithful to the general observations we have just made.

Instead of beginning with general principles of analysis such as satisfaction, adjustment or alienation, we shall consider the worker at the various levels of his work situation, that is to say in his relations with:

— the system of execution,
— the system of organisation, and
— the system of direction of work,

adding to this trilogy a study of workers' attitudes, insofar as they are members of a community. It is important to see how the different aspects of analysis that we have distinguished link up at each level of the work situation.

Another point which should be emphasized is that it seems impossible to separate attitudes towards change from attitudes connected with the evolution of the industrial structures.

The importance that will be attributed in this report to the evolution of work is derived from our justification of a sociology dealing with alienation, that is to say with the relations between the worker and the work he does. This perspective makes it necessary to consider the historical transformation of these relations. There is no question here of giving preference to occupational realities compared with other realities, but simply of considering, within one and the same context, the evolution of the operation, the administration and the decision making process involved in industrial work.

This evolution, which we have ourselves had several opportunities to describe (1955), may be summed up in terms similar to those we have just used. The progress of rationalisation leads from what we have called the *occupational* *system* of work to the *technical system* of work, in other words from the primary importance of the work operation to the primary importance of organisation.

It can be predicted that this system will be succeeded by one in which the main accent is on decision-making. This formulation may be misleading. Nobody would think of denying that the workers were subjected during the first stages of industrialisation to a very strict system of decision-making; it transferred to the workers the impersonal exigencies of the capitalist market. But the futher evolution of industrial structures is a new situation in which occupation and market, and work and money, constitute two separate principles of production—often, though not always, in conflict—towards a triumph of organisation, the coalescence of work, remodelled by the requirements of industrial rationalisation, with a management which administers firms and no longer merely discharges an activity. Finally, there is a situation in which the whole working life is linked more and more closely to an integrated system of political-economic decision-making. It is probable that this transformation of the different levels of industrial structures has direct and decisive effects on the system of workers' attitudes. Much of the research reviewed in this report provides evidence of such links, and the recent thesis by R. Blauner (1962) and also our own recent survey (1965) show the importance of distinguishing between the different types of work and of industrial structures.

As this report is devoted to a summary of the findings of existing sociological research rather than to the formulation of the problems needing study, it seemed wise to confine it to studies made in the industrialised countries of the West, for the simple reason that the great majority of studies in industrial sociology or the sociology of work have been carried out in these countries. It must be admitted, however, that this restriction has serious disadvantages and that research done on firms both in socialist and in developing countries would enrich and complement the results given here. It can only be hoped that other reports will follow with an analysis of the results of the increasingly numerous studies carried out in these areas.

In this report, it is not our intention to provide a complete survey of all literature on the attitudes of workers towards changes affecting the work situation. We shall set forth some theoretical conclusions and indicate the practical use to which the research can or might be put.

Section I

THE WORKER AND THE OCCUPATIONAL SYSTEM

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INTRODUCTION

Job satisfaction, attitudes and behaviour at work cannot be analysed simply as the outcome of a situation. We have to consider more than the psychological viewpoint which regards attitudes and satisfactions as the response to an encounter between human motivations and the work situation which is independent of the worker and to which he must adjust himself. The work situation is an experience in which situation and behaviour form one interdependent whole. The individual's goals and "expectations" which give meaning to the situation, are also influenced by it (R. Bassoul, P. Bernard, A. Touraine, 1960). His plans together with the system of expectations determine the meaning that he gives to the work situation. Different workers will find different degrees of satisfaction in the same situation, according to whether, for example, they come to the firm to use their skill or only to earn a living, that is to say according to their own kind of personal goals. Occupational attitudes are the result of this encounter between the expectations of the worker and a significant work situation.

This encounter does not merely produce a series of satisfactions and dissatisfactions: it is translated into action. The skilled worker is not only embittered by the disappearance of his trade; he seeks to maintain his occupational autonomy which is threatened by scientific work organisation. The production line worker not only suffers from monotony and boredom but is engaged in a surreptitious battle against pace. If the automation worker considers primarily those aspects of work which influence his private sphere, his behaviour is expressed in career claims. The study of attitudes towards work, therefore, leads to an analysis of workers' value orientations and types of trade union action, a trend which can only be broadly outlined in this first section.

Before seeing how they are integrated into systems, we shall consider attitudes towards work at different levels of the work situation:

1. at job level: attitudes in regard to work content and environment, role perceptions, skill and status;
2. at primary work group level: study of dissatisfactions arising from the breaking-up of the integrated team, and of informal relations between posts;
3. organisational problems dealt with in the second section will only be touched on in this section where they affect certain types of work behaviour such as restriction of output and resistance to time and motion studies;
4. similarly, labour action will only be considered in this first section as a result of occupational alienation, its relations to decision-making and power being the subject of Section III.

At the first two levels, the encounter between personal plans and the situation will usually be expressed in satisfactions or dissatisfactions concerning work and relations with fellow-workers. At the organisational level, discrepancies between goals and situation are expressed in individual dissatisfactions connected with the loss of occupational initiative and with subordination, but also in informal collective behaviour such as restriction of output and resistance to time and motion studies. At the decision-making level, that is to say the level of labour-management relations, dissatisfactions become formal labour claims and the personal goals are dominated by the collective ones.

At each of these levels of analysis, moreover, we shall consider workers' reactions to the various management measures for improving the work situation, from job rotation and human relations to job enlargement and socio-technical production systems. The ineffectiveness of these measures is largely due to the fact that they take insufficient account of the interdependence of the various levels of the work situation.

Since work behaviour depends closely on the nature of work, attitudes will be considered against the general background of the evolution of work.

In the contemporary Western world, the evolution of work may be summed up as the transition from the craft system of work to the technical system of production (A. Touraine, 1955). Under the craft system, the workshop consisted of a number of workplaces in which the skilled craftsman was autonomous by reason of his capability. Being responsible for his job as a whole, he was free to choose his tools and his methods of working. Following Taylor and Ford, the craft system of work has been superseded by the technical system in which management intervenes in production to organise and to rationalise it; workplaces become interdependent, methods of work are standardised and the worker is subjected to a set pace of production: the organisational system controls the methods and procedures for carrying out the work. Finally, with automation, the decision-making problems take precedence over the organisational problems.

This development takes place in two phases:

1. In the phase of the downgrading of skilled work, the craft's work is broken down into fragmentary and repetitive tasks, of which that of the semi-skilled worker is typical. Confronted with this fragmentation of work, the worker's response is to maintain his occupational autonomy.

2. As the technical organisation of work is further developed to the point of automation, the re-integration of work takes place. The unit of production is no longer the job or the specialised machine but a composite entity which may be as large as the workshop or even the factory. During this phase there is another change in the nature of work. The machine becomes autonomous of the worker and the work loses its aspects of occupational specialisation (P. Naville, 1963). The worker's action therefore is to seek to maintain his private life at work.

Chapter I

FRAGMENTATION OF WORK AND THE MAINTENANCE OF OCCUPATIONAL AUTONOMY

Mechanisation and the rationalisation of work have given rise to profound occupational dissatisfaction, described at length by psychologists and sociologists. At the job level this dissatisfaction is reflected first in the disappearance of pride in creative work, and on the primary work group level at the same time by loss of interest in the trade. On the work organisation level, the worker's control over his work gave place to occupational alienation which sought compensation by organising an informal control of production. Finally, the ways in which the different elements of dissatisfaction are organised, bring about different types of changes in labour action, evolving from the determination to maintain a trade towards the defence of the standard of living.

1. From Creative Pride in the Trade to Resignation to Line Production

a) *Pride in the trade*

With the division of labour the unitary trades begin to disappear and with them the pride which the worker takes in the creation of a piece of work (G. Friedmann, 1946; M. Verry, 1955). Pride in work is characteristic of an experience slowly acquired, perhaps during a lifetime of work, through contact with work materials, familiarity with tool and machine, inheritance of " father-to-son secrets ", the " turn of the hand ", and the knowledge of the " tricks " of the trade. Such was the attitude of the ironworker who described his trade, during an enquiry by the Laboratoire de Sociologie Industrielle, as " the most responsible, the most complete and the most skilled in metallurgy " (P. Bernard, 1962). Similarly a rollingmill operator in the French iron and steel industry exclaimed, indicating a typed instruction sheet: " I don't give a damn for their figures in the offices. I know them all. It's here between the furnaces and the planisher that the rolling gets done, and if the mill-hand isn't there, nothing gets done. Pyrometers and calculating machines! " (Dofny et al 1957).

This reaction stemming from occupational pride expressed the frustration of a craft worker dispossessed of his trade by modernisation. The instruction sheet symbolised the fading away of the importance of the mill-hand's slowly-acquired occupational " secret ". In modern installations he is not asked to interpret, nor for the most part to understand, but simply to follow exactly the prescriptions on the work sheet.

The machine operator's chances of advancement by technical ability are small in the modern firm. There is no longer a hierarchy of experience and skill: mechanical processes require only a few weeks to learn, a few days even of apprenticeship. Possibilities and hopes of advancement are reduced by this equality of capability, this similarity of status.

Occupational status and work satisfaction, however, are closely linked. (O. Banks, 1960). Some sociologists have seen in the occupational prestige (composed of level of skill, degree of instruction or experience, degree of job responsibility, and income) the best indicator of satisfaction in work (J. C. Brown, 1954). This would explain why in modern industry, satisfaction and interest in work tend to be limited to the maintenance trades, in which competence, variety, initiative and job responsibility remain, rather than to enter the mass production shops dominated by organisation and subservience to a production pace. (P. Bernard, 1962).

b) *Reactions to fragmented work*

After enquiries on Taylorism (R. F. Hoxie, 1916), the research by Walker and the Yale school brought out workers' criticisms of the fragmentary and repetitive nature of the tasks and the frustrations connected with impersonal and semi-skilled work. C. R. Walker and R. H. Guest (1952) studied a sample of workers transferred from non-repetitive work, where their pace was not governed by the machine, to a mass production job on an automobile assembly line: 90 per cent of these workers did not like mass production, and a high proportion of absenteeism was recorded. Their work interest was classified at the lowest level of a hierarchy of work motivation. A majority of the workers criticised sharply the repetitiveness of work, its mechanical character and the unpleasantness of being dependent on a conveyor belt system.

Walker shows that the frustrations of assembly line work stem from the feeling of doing low quality work. The old skills have lost their usefulness; experience and craft have disappeared, together with everything allowing self-expression to a man at his work, and leaving boredom and monotony as the chief characteristics. Work physiologists and psychologists have seen in these changes the main causes of industrial fatigue (Lahy, 1921; Studies of the British Medical Research Council, Wyatt & Fraser, 1929) and sociologists have described at length the effects of these changes (G. Friedmann, 1946). An Italian worker (Dal Pane, 1960) expressed his feelings in the following way: " One may well like one's work but, when every day you do the same uninteresting operation dozens, hundreds, thousands of times, knowing that the next day, week and month you will still have to do the same work,. . . you find the working day interminable, hate your work, and lose all confidence in yourself. "

c) *Adaptation and impoverishment of expectations*

The numbing of the faculties brought on by assembly line work tends to induce a kind of habituation in workers, which facilitates their adjustment at the price of the degradation of their individual aspirations (R. H. Guest, 1960). Most workers aspire to leave the anonymity and monotony of their task, but the majority are pessimistic about getting the work they want, especially in their present firm. They hope to find a job which they can keep as they grow older and which will allow them some control over their working speed. The experience of a hopeless situation limits their level of aspiration, and with increasing seniority in the firm their desire for an independent job expresses itself more and more as a dream or is transferred to a dream of another future for their children.

Adjustment to fragmented and monotonous work is facilitated by the degradation of the system of expectations. Many workers are so mechanically tied to their tasks that they are no longer aware of the monotony. They adjust themselves by reducing their level of aspiration to the level of their job (F. H. Blum, 1953). Those who are most bored are the workers with a level of aspiration above their present work level (C. Barrier, 1962).

d) *Resistance to job rotation*

To compensate for the lack of interest which workers manifest under the fragmentary work of modern industry, a number of palliatives have been introduced (rotation of posts, breaks, background music). The relative failure of these remedies arose from the fact that they applied only to the level of the individual job. It was also found that the rotation of jobs breaks up the companionship which develops among neighbouring workers through informal relations (chats, jokes), which take the place of occupational relations on assembly line work. Job rotation, moreover, does not necessarily eliminate the monotony of work. A worker goes from one repetitive rhythm to an equally monotonous one: " the diversion has only lasted for the few minutes required to get used to the new rhythm " (C. Barrier, 1962).

Job rotation organised without consultation with those concerned provokes lively resistance. C. Barrier has shown that when incentive payment systems are in force, workers resist job rotation because it deprives them of control over their output; it disorganises the informal control of a worker over his work. From this, it appears that it is futile to attempt to counterbalance, solely at the job level, a situation of alienation which arises from a certain conception of work organisation. To make job rotation acceptable to the workers, the system of remuneration would also have to be changed.

It is even necessary, perhaps, to seek an explanation for the resistance at another level. Changes in jobs increase the workers' degree of subordination to management (Warner and Low, 1947). Consequently, these changes have sometimes been regarded as a means of breaking up the workers' solidarity, of which the work group is the basis.

2. GROUP MEMBERSHIP AND SATISFACTION

The disintegration of team work into individual jobs is characteristic of the transition from the craft system to the assembly line system. Much research has recorded the dissatisfaction caused by the breaking up of the traditional teams in which everybody co-operated, under a craftsman, in the common task.

In a comparison between workers in the automobile industry and those in the iron and steel industries, it was explained (C. R. Walker, 1950) that the high degree of occupational satisfaction among the iron and steel workers was due to the fact that they were organised in work teams. Collective work maintained the constant occupational co-operation among these workers, while workers on automobile assembly lines, who did their jobs individually, expressed a low level of satisfaction.

According to a British study of attitudes in the iron and steel industry (W. H. Scott et al. 1956) the workers, questioned after the introduction of a technical change, regretted the loss of the family-like atmosphere, the happy relations and the feeling of team solidarity that they had experienced in the old workshop. Sixty-three per cent thought that human relations had deteriorated as a result of the change. In other words not only had satisfaction decreased but, furthermore, the nature of the work relations was changing.

a) *From the stimulating team atmosphere to the boredom of the isolated job*

Where the team in the old workshops was grouped round the machine and the workers were in direct and constant contact with one another, in the modern workshops, the physical distance between workers tends to grow. The assembly line is a series of isolated jobs especially when the posts are far apart. The worker's signal for action is no longer the behaviour of other workers but the arrival of material on the conveyor. These developments decrease personal relations and accentuate the impression of anonymity of work which is done by the conveyor belt. Research by the British Medical Council (S. Wyatt et al. 1929, 1934) has shown that social and psychological isolation are more important as causes of boredom and discontent than the repetitive work itself. Resistance to changes can also be explained, therefore, as resistance to the change in personal interactions (G. Friedmann, 1958).

b) *From occupational relations to informal relations*

During the transition from team work to a series of individual tasks, there is also a change in the degree of co-operation at work and the occupational relations between persons. A characteristic of the craft team was mutual assistance. One craftsman, a locksmith, stated: " There is very good understanding; you can put a tool down and be sure of finding it in its place when you want it again " (P. Bernard, 1962). Such understanding no longer exists among the adjusters, who said: " We have a lot to do but we rarely help each other ". " We are not a real team ". The adjuster is isolated from the workers whose machines he regulates but whom he does not supervise. Technical development has destroyed the cohesion of the craft team in which informal and occupational relations were interwoven. On line work, occupational relations no longer exist; only informal relations survive, a certain comradeship depending on chats and jokes.

c) *From social prestige to anonymity*

In the craft team, the hierarchy of posts was based on competence and occupational status, and the primary work group was an element of social integration. In line work, the equal status of a number of interchangeable posts destroys the harmony of work relations (Trist, 1951). In the eyes of the worker, the occupational basis for hierarchic regulations has disappeared. Foremen who no longer teach workers their jobs but merely check their output are considered by the workers as useless (Dofny et al. 1957).

In the rolling-mill or foundry the senior worker used to be the leader of the shift, and the mill-hand's prestige was based on his skill acquired through life-long experience at the trade. When the rolling process is modernised and the work rationalised, however, the social status of these skilled workers is no longer recognised by the new operators who call them " the old men " (C. Durand, 1960) and say that they don't even know how to " roll ", meaning the manipulation of the complex controls which operate the new machines. Despite the great responsibility attached to the new job, the operators learn their work within a few weeks. They do this by imitative learning from another operator who is one of themselves and not by working under the control of a " senior worker ". For these processes it is enough to have the psychomotory facility and quickness of hand natural to young people. The system of relations which was formerly based on the occupational hierarchy is thus replaced by a system of informal relations among equals, and friendships are formed between operators at the same occupational level.

In the automobile industry, where the team is broken up into a number of independent jobs, the social atmosphere is different. The system of supervision, which is part of the organisation of work, hampers co-operation even between the adjusters (D. Mothe, 1959). The miners who were studied by the Tavistock Institute (E. Trist and K. Bamforth, 1951) and by the C.E.R.P. (G. Barbichon and S. Moscovici, 1962) expressed a preference for small integrated teams. The individual and specialised tasks in the long-wall system isolated them from each other and rivalries were created between successive shifts who ignored one another and even complicated each other's work.

d) *Acceptance of human relations programmes*

Stress has been laid on the importance of primary work group integration as a factor of occupational satisfaction (E. Mayo, 1933). The insistence on the role played by morale and informal relations in productivity was the basis of the practice of human relations in industry, which has assumed different forms. By encouraging informal relations it is hoped that the worker would become less conscious of the physical compulsions of work. By bringing work posts closer together, neighbourhood groupings are created which give rise to friendly relations and talks. The psychological consent of the worker is sought through the development of personal contacts and the improvement of his relations with the foreman.

The worker's loss of identification with his work was to be counterbalanced by his integration into the firm and by the substitution of social values for those of craftsmanship. This effort to integrate the worker into the firm, although not designed to be an attempt to break up labour solidarity and to frustrate trade union action, was very quickly seen as such. It was an attempt to prevent dissatisfaction being turned into a claim through psychological treatment; to reduce workers' attitudes to a number of individual objectives and to refuse to consider them as a collective objective.

Even when the effort was made to associate the trade unions with the participation of the personnel in the firm, as for example in the British industrial relations movement, it retained its integrationist character. The formula of joint consultation, in which the workers' delegates and the representatives of management are to co-operate, implied that the workers' co-operation could be obtained through their acceptance of the values, the " tradition " and the " culture " of the firm (W. H. Scott, 1950). But have these human relations policies satisfied the workers' expectations? In his informal group relations the worker was seeking not merely psychological satisfaction and a refuge from the isolation, boredom and monotony of work; he was also trying to recreate the group solidarity, which had been broken up with the disappearance of the crafts and the disintegration of the occupational teams.

Criticising the social isolation in which the worker is kept by the organisation of work and the supervisory system, D. Mothe attributes this to management's desire to break up the workers' solidarity. He also describes how solidarity is being covertly built up again, contrary to the rules, by a complex informal system of tricks and subterfuges. The informal group, in addition to its immediate function of integration and of emotional satisfaction, helps to build up the workers' resistance to the domination of organisation. We shall examine this under the next heading, together with the workers' reactions to supervision or to the system of the organisation of work.

3. WORKERS' REACTIONS AGAINST WORK ORGANISATION

a) *From autonomy to subordination*

Under the craft system, there was a great measure of independence in the actual performance of work. The team itself organised and controlled its production. With the introduction of the so-called scientific organisation of work, however, these independent elements in work are transferred from the worker to work offices, where the task of each individual is defined in detail. This separation of the organisation of work from the performance of it gives rise to many grievances. The workers complain that all judgment and initiative have been removed from their work (Walker and Guest, 1952). They say they would like to be at liberty to plan their work and to decide how to use their tools. This freedom of action disappears, however, as the prescribed part of the work is increased.

It is the mechanised pace of work, however, which arouses the strongest reactions (C. R. Walker, 1951, R. Guest, 1960, E. Weinberg, 1955). The worker experiences it as a loss of control over his work. He produces one particular part of a product which he never sees as a whole. One worker said, " I like the sort of work where you have the impression of accomplishing something and of doing it well. . . the conveyor is a gigantic machine that I cannot control " (C. Walker, 1952).

On the other hand, satisfaction is expressed by workers who are not on a production line and who are able to stop their machines from time to time if they wish (E. Chinoy, 1955). Miners who have control of their machines and working speeds also express a higher degree of satisfaction than their more highly skilled co-workers who cannot determine the speed and use of their machines (A. W. Gouldner, 1954). Pride in the struggle with and victory over environment is also a source of satisfaction (Friedmann and Havighurst, 1954). The strong attachment to their work shown by drivers of engines and locomotives is partly explained by the high degree of independence which they enjoy in their work: " I am my own boss when I am driving the train; nobody tells me what I am to do " (Reynolds and Shister, quoted by R. Blauner, 1960).

Another aspect of the worker's loss of independence is his increasing subordination to hierarchic authority. At the bottom of the hierarchy, he is in danger of having his activity entirely prescribed by others (W. F. Whyte, 1955). The close control over him by management, made possible by the system of scientifically organised work typified by the stop-watch, complete supervision by the foreman and the fixing of working methods, are an essential cause of the worker's occupational alienation. The absence of too close supervision is an important reason for high satisfaction (A. W. Gouldner, 1954). But before considering the ways in which the worker tries to regain a certain degree of control over his work, by resisting the firm's organisation through a parallel informal organisation, let us see what measures have been designed to remedy his situation.

b) *Job enlargement and the socio-technical system*

The scientific organisation of work has been understood as a social threat to the workers, and the conveyor belt as a means of enforcing a certain speed of work. Ford and other experts on work organisation, basing their argument on the idea of habituation, have claimed that fragmentary and repetitive tasks suited the workers (G. Friedmann, 1945). But the more intelligent workers actually have difficulty in adjusting themselves to fragmented work (G. Friedmann, 1955).

Although work is more rapid when each job is simplified to the utmost, it does not follow that workers are satisfied with uninteresting work, nor that they shirk the responsibility of more complicated work. They only seem to behave in this way because they think that management does not expect them to take responsibility (A. Turner, 1955). Several experiments have demonstrated the hollowness of mechanistic explanations of behaviour supplied by the mechanisers. The experiment of the check on workers' speeds, reported in Money and Motivation (W. F. Whyte, 1955), showed that it is important for workers to have the initiative in matters of production rates.

The I.B.M.'s job enlargement experiment proved that sub-division and extreme simplification of work, and repetitiveness and de-personalisation are not principles of sound job organisation. The experiment consisted in re-grouping the operators' tasks to make them more complete, and in rotating jobs and teams, while at the same time giving more scope for initiative and responsibility. The new interest in the work increased the personnel's satisfaction. Output and quality improved (F. L. Richardson and C. R. Walker, 1948).

The success of this experiment led to severe criticism of the Taylorian principles of work organisation. Further experiments in job enlargement were made by certain researchers in Michigan (R. Likert, D. Katz, 1949, Nancy Morse, 1953). Satisfaction increases with complexity of work, showing a man's need to identify himself with his work, to perform it while still being allowed to organise and control it. Among office workers, job enlargement leads to a smaller turnover of personnel and at the same time to greater flexibility in operation (R. H. Guest, 1957).

As a result of these experiments, criticism of Taylor's conception of organised work developed in a more realistic direction than that of simple psychological remedies. To the extent that the idea formulated by the Tavistock Institute of arranging a " socio-technical system " of production which gives simultaneous consideration to the performance of work, to the primary work group and to the organisation of work, is an important step towards the humanisation of work. Not only would the content and meaning of work be rendered more complete, but the worker would also regain a certain measure of control over his work.

The aim of the Tavistock Institute's studies was to elucidate the interaction between the technological and the social factors involved in different systems of coal mining. The various work groups were studied in relation to the requirements of the technical systems of work organisation. In the small groups of the old-established coal mining system, each miner made his personal contribution, different from but complementary to that of the others. In the " conventional " mechanised system which succeeded it, the tasks were specialised among a certain number of separate groups in which all the members did exactly the same work. Research showed that many difficulties (competitive work relations, friction with management, poor morale, low output) arose from the over-specialisation of the functions of the groups and the lack of co-operation between them. By creating the composite long-wall system in which the tasks of the groups were not separated, where comprehensive roles were re-introduced, where members of groups were made interchangeable and where the work became self-regulating, better relations, greater occupational satisfaction and higher productivity were obtained. The organisation of human work and the technical necessities had thus been effectively adapted to one another by grafting the customs and values of the old work system on to the new technical system, giving back to the workers a greater autonomy in the organisation of their work and an increased measure of control over it (E. L. Trist and H. Murray, 1959; E. L. Trist et al, 1963). These findings also support the conclusion that there is a range of choice in the organisation of work, related to the technical needs. Apart from the technical reason for its existence, a work organisation has social and psychological requirements in its own right, and independently of technology (A. T. Wilson, 1955; F. C. Mann, H. L. Hoffmann, 1956).

This concept of organisation as a socio-technical system gave a great stimulus to human engineering and ergonomics. It opens a vast field of operations to engineers who design new machines and plants. It enables them to take into consideration the findings of the different sciences dealing with men at work (A. Chapanis, 1957; A. Lucas, 1959).

The idea of the socio-technical system also highlights the mutual influence between production methods and forms of human organisation. The work group and morale are studied as buttresses of the work organisation. Thus, job enlargement as conceived at I.B.M. re-opens the question of the role of the foreman. He can become less autocratic and take on more responsibility.

Although technical necessities no not control all aspects of work organisation, to what extent can technical surroundings be redesigned to suit men's needs? It has been stressed that job enlargement cannot be applied to an assembly line with a conveyor belt (C. R. Walker, 1962). A radical enlargement of tasks, in fact, means that the principle of the assembly line must be abandoned (R. Blauner, 1960).

Technical procedures, indeed, remain the most important factor in determining the type of structure and the type of relations in the firm. It may be asked which management principles remain valid for all systems of production (J. Woodward, 1958).

For the final solution of the problem of fragmented work, is it necessary to wait until, through further technological evolution, repetitive work is automated? It has been suggested that automation will play a decisive part in superseding fragmented work (C. R. Walker, 1951 and 1957; G. Friedmann, 1958) but, as we shall see in the following pages, these opinions are still controversial. It is true, however, that automation has made it necessary to re-think the concept of work.

c) *Restriction of output and resistance to time and motion studies*

The workers have not waited for job enlargement before trying to regain the control over the work taken from them by scientific organisation. The phenomenon of restriction of output is widespread (Whyte, 1955). The first analysis dates back to Max Weber and Simiand (1907). Go-slow continues to be the subject of various observations and interpretations (Mayo and Roethlisberger, D. Roy, S. M. Vitales, Lupton, etc.). Since the Renault strikes in 1912 to obtain control by the workers over time and motion studies, up to the recently described manifestations (P. Rolle, 1962), the fight against time has been a frequent form of the workers' resistance to output norms.

Such workers' behaviour can be considered at different levels, as an individual adjustment to working conditions, as a manifestation of solidarity by the work group, as a reaction against organisation and as a form of preparation for trade union action.

Psychologists have insisted upon interpreting go-slow as an expression of human motivations such as the need for autonomy and independence. Although cases of individual go-slow behaviour have been observed, although there is a conflict at the level of the individual between the different stimuli which affect him (economic need for a higher wage, prospect of promotion and, on the other hand, concern for fellowship and desire to spare his efforts), restriction of output is more generally considered as collective behaviour. The production ceiling set by the workers is the same for all in the work groups (C. Durand 1959). It is a collective norm fixed by agreement or followed by tradition. It is an act of solidarity (the norm protects the least fortunate), and the moral pressure of the group has its effect on individual behaviour. Similarly, when the worker being timed decreases his speed in the presence of the stop-watch, he knows that he is being backed up by the whole shop, a support shown through demonstrations of solidarity.

This resistance by the primary work group appears at the organisational level as an informal recapture of control over output by workers. The worker reacts against his subordinate situation in a spirit of resistance to the rules and to the norms of mass production (E. Thorsrud, 1952). Mechanisation and rationalisation have tended to break up the social solidarity of the workers: and they have reacted by evading the compulsions of the system in which they are confined and by creating a solidarity against the norms (Warner and Low, 1947). They improvise a private and parallel counter-organisation against the imposed organisation. In the system of mass production, the informal primary group becomes the unit for resistance to norms. The parts played by its members in deciding the work pace create a new leadership, which is based not on occupational ability but on power to influence.

Has restriction of output the character of a claim? Is it supposed to be a challenge to the employer's authority and a means of intervening at the decision level? The organisation of go-slow does not cut across the trade union organisations and it would still go on if there were no trade unions. Its forms are generally more surreptitious and its aims are not openly stated.

However, despite the informality of the organisation, the firm is aware of its force. The settlement of the different economic interests will vary with the economic trend (employment level on the worker's side, competition on the employer's), and will follow a pattern similar to that of negotiations.

The similarity between go-slow and trade union action is much more marked in the occupational system of work than in mass production. In the former, agreement is made at the level of the senior workers, amongst whom the shop stewards are often recruited. Go-slow may then take the form of action in support of a negotiation of rates. In the technical system of production, the greater separation between the operating and the organisational aspects of work results in a go-slow which is more informal. The strikes in opposition to the revision of output norms were wildcat strikes. To the extent that go-slow and resistance to time and motion studies take place in a work situation which is perceived as alienating, occupational dissatisfaction tends to become a claim.

4. Trade Union Action against Fragmented Work

a) *Protecting the skilled trade*

From the early days of Taylorism until the present day, the evolution of work has aroused attempts among not only industrial workers but all employees to protect the skilled trades and occupational autonomy.

The American trade unions displayed a deeply rooted hostility to Taylorism which was destroying the traditional occupational values and structures. Equally violent reactions, including strikes, against Taylorism occurred in France. The French iron and steel workers, like their American colleagues, blamed Taylorism for its devaluation of skilled work. " The personality, the intelligence, even the aspirations of the worker are effaced, wiped out, banished from the workshops and factories...he has become an automaton ...an additional cog in the wheel, essential to the job or to the machine which does the work ". (Merrheim, quoted by G. Friedmann, 1946, page 250). Trade union reactions, however, did not take the form of the hatred toward the machine manifested on the appearance of the looms by the weavers in Lyons and the English Luddites. In statements made by the trade unionists, a distinction was drawn between technical progress and the use made of it by employers through the Taylorian organisation of work (Dal Pane, 1960).

Efforts to protect the skilled trades are still found in the recent most advanced phases of the evolution of work. In the English iron and steel industry, the older workers accept with resentment the modernisation of the workshops, which deprives them of their trade and relegates them to the tool and maintenance services (W. H. Scott et al, 1956). In France, the weavers regret the degradation of their work brought about by automation. " I do not make cloth any longer, I watch my dials " (D. Lahalle, 1962). Although they generally recognise that technical progress is inescapable, the workers do their best to preserve the customs, the hopes and the guarantees of their trades. On the introduction of automatic printing machines, the French " Syndicat Général du Livre " asked that the new jobs should be reserved for the workers who are members of their association (P. Naville, J. Palierne, 1960). The systematic resistance of the calculating machine operators to the introduction of electronic computers, (I. Russakoff Hoss, 1960) should also be noted.

The desire to safeguard skilled trades when confronted by technical change is not confined to industrial workers. In order to avoid losing their occupational autonomy, threatened by the rationalisation of their work, the United States engineers' associations negotiated rules preserving flexibility in the allocation of tasks and definition of functions, and re-introduced the level of professional qualification among the criteria for promotion (R. I. Walton, 1961). The French doctors' defiant reaction to social legislation to control the medical profession is also explained by the threat to their professional autonomy (B. Mottez, 1961).

What are the reasons for the defence of the trade which often appear to us as hopeless and anachronistic but which are pregnant with meaning in terms of the nature of work? Mechanisation has been regarded by the workers as an attack on the prestige of their occupations. Work, in fact, is essentially a source of status both in the firm and in the community. A man's type of work is a label which to a great extent gives him his position in life (B. Karsh, 1959). The skilled worker's social status is taken away from him by specialisation which sub-divides his work into elementary tasks (W. E. Moore, 1951). The breaking up of the former social structure played a great part in the workers' resistance to technical change (E. Trist and K. Bamforth, 1961).

References to the cultural values of the working class form an important part of the analysis of attitudes towards technological change among British iron and steel workers (W. H. Scott et al, 1956; O. Banks, 1960). Their reactions to the change are explained in a comparison of the objective facts with the subjective evaluations connected with the participants' status in the firm, their system of values and the social perspectives of the change.

Protection of occupational autonomy is a defence both of an occupational culture and of the communal way of experiencing work. Workers are opposed, for example, to output norms not only to avoid excessive speeds of work but also because pace destroys the pride of craftsmanship in a " good job ". Cultural values, such as family ties to a trade, persist in the most highly industrialised communities (G. Palmer, 1954). Many men and women, born and brought up in the families of railwaymen, teachers, carpenters, physicians, textile workers, have never thought, when starting work, of following any other trade but that of their parents.

The specific characteristics of cultural standards, which vary according to different occupations, trades and industries (S. Barkin, 1960; Blauner, 1964) contain nothing which detracts from the significance of these standards in general. The upholding of occupational culture and autonomy has been the mainstay of trade unionism among the skilled trades. Under the former work system, the work group was the basis of the workers' solidarity and of trade union action. With the disintegration of this old-established unit, the technical system of work will bring about the disappearance of this first form of trade union action. The trade unionism of the trade may develop into class trade unionism.

b) *New forms of trade union action*

Shorn of its occupational basis for action, trade unionism may turn to upholding a standard of living. The claim for control, in the absence of its occupational meaning, is likely to develop into a more general claim for social control and an informal resistance to output norms. For, with the introduction of mass production, the workers' skill ceases to be the heart of the productive system. Deprived of initiative at work and of participation in the organisation of production the workers direct their claims towards a share in its products, towards attaining a higher standard of living (A. Touraine, 1955).

Class solidarity becomes the substitute for trade solidarity. The trade unions become larger and more democratic; they are no longer trade associations of a minority but " the association of the greatest number of workers " (Friedmann, 1952).

Rationalisation and the question of output have given rise to a new type of consciousness in which the predominant feeling is that of the subordinate position of the workers. This new consciousness questions not only the organisation of work but that of society as a whole (A. Touraine, 1961). The labour movement becomes aware that the worker will only regain control over his work through a measure of control of the firm, which itself is dependent on its participation in governmental power. This new form of labour action, though it arises out of the work situation, is dealt with in an analysis of power relations in Section III.

At the work level, the result is a certain lack of interest in trade unionism in occupational problems and in problems of work organisation (D. Bell, 1958). For example, a leader of the French " Confédération générale du Travail " interprets occupational degradation in terms of " pauperisation " (30th Congress of the C.G.T., 1955). This tendency towards claims based on standard of living, together with the absence of an established work group, explains why the workers' attempts to control their working conditions have largely been expressed in a more informal way, that is to say by restriction of output and resistance to time and motion studies.

Chapter II

RE-INTEGRATION OF WORK TASKS

Automation has strengthened the movement towards the re-integration of work tasks, of which job enlargement was only a forerunner of limited application. The technical concept of automated production processes is, indeed, one of integrated groups of work processes (P. Naville, 1958). The individual job is no longer isolated; it owes its new significance to the part it plays in a complex whole (Touraine, 1955). At the same time, however, the functions of the men are more and more remote from the functions of the machine (P. Naville, 1963).

1. Satisfaction and dissatisfaction

Does this integration of work tasks produce the effects expected by the optimistic humanisers of work? Apart from the fact that there is general agreement about the improvement of the physical conditions of work, the effects of automation remain a controversial matter. The impressions of inactivity and of nervous tension at job level are in conflict with one another; feelings of being integrated and at the same time isolated at work also reflect the contradictory impressions of work groups.

a) *Tension or inactivity?*

The humanisation beyond the field of human relations that was expected from automation (D. Bell, 1958) is justified in general by the increased comfort at work. In automated plants the workers are in the best conditions of comfort, cleanliness, lighting and temperature (Walker, 1957). Less physical effort and fewer accidents are also given a high place by the workers among the occupational improvements brought about by technical change (E.P.A., 1959; Rustant, 1959).

In many modern plants, however physical effort must be replaced by constant attention and mental concentration, which are a source of nervous tension (A. Lucas, 1957; P. Naville, 1958; W. A. Faunce, 1960). Mistakes and carelessness have more serious results than they had before automation. Pressing the wrong button can cause a very costly breakdown, not only by reason of the value of the equipment but also because of the extent of the assembly immobilised by the stoppage. Although automation has reduced the feeling of dissatisfaction experienced by workers on machine-paced work, it has not put an end to it (P. Naville, 1961).

Automation eliminates the complete subjection of the workers to the pace of the machine, which was a characteristic of the mass production assembly lines (J. Diebold, 1957). Pace problems only persist in the partially automated processes (D.S.I.R., 1959). The work of the operator in charge of automatic plants consists essentially in keeping an eye on the machine and in checking from time to time that it is functioning correctly, so much so that the workers in automated plants complain rather of becoming bored and irritable. Such irritability has been explained as the result of the exercise of attention without compensatory physical movement (A. Lucas, 1959). After a period of emergency when recurrent signals need immediate attention, there follow long periods of complete inaction in which the attention relaxes. In the chemicals industry, such a period can last for a week at a time (M. H. Mackworth, 1957).

The discontinuity of periods of activity has been cited as a source of boredom even by locomotive drivers and aircraft pilots. In the case of operators in automated plants, the remedy would appear to consist in occupying such time with work on allied activities, on taking samples and making periodic checks of correct functioning. Moreover, to stimulate curiosity in regard to work, advanced training lectures or information meetings on plant operation could serve to renew an interest in the work (P. Naville, 1958).

Adjustment to the passive nature of machine tending, however, varies considerably according to the worker's family, occupational and educational background. Traditionally industrial workers tend to be more affected by the inactivity of automated work than, for example, workers of rural origin. Negroes, also, are reported to be more satisfied than white people with the automation of their work. The reason for this might be that formerly they were more often employed on heavy unskilled work and that physical labour, for them, is culturally devaluated.

b) *Integration or Isolation?*

Here, again, controversy arises. Is the automation worker an integrated part of a human group similar in pattern to the automated plant, or is he an isolated person in an enormous technical assembly? What happens to these primary work relations?

The shrinkage in the number of personnel in automated sectors and the large size of the workshops considerably reduce the number of people working in a given area and therefore the amount of communication so much so that a British trade union asked for a solitude bonus for workers supervising automated processes (B. Karsh, 1959). Automobile workers complain of the social isolation brought about by the greater distances between posts in the automated workshop and by the fewer breaks and occasions for contact among workers (W. A. Faunce, 1958). Similarly, workers in another workshop complained of not being able to converse (C. R. Walker, 1957). The increasing state of abstraction induced by watching the signals tends to depersonalise working relations (C. Durand, 1960). Supervision by the foreman, moreover, being of a non-occupational nature, is less easy to accept. Rotation of members of teams, which are composed of personnel who are more readily interchangeable, tends to destroy their homogeneity and " esprit de corps " (G. Caire, 1960).

Psychologists have endeavoured to find remedies for the depressing effects of isolation which can be aggravated by the amount of responsibility assumed (A. K. Rice, 1958). Various improvements are suggested: double-banking the posts, freedom to move about, automated safety devices, and greater use of inter-phones and telephones. Such inter-phone networks could be useful in creating new informal work relations.

Not all forms of automated plant, however, have the effect of isolating the workers. Automatic rolling-mill equipment does not do away with the primary work group. In automated thermal power stations, moreover, the work teams seem to be more united (F. C. Mann and L.R. Hoffman, 1956), because owing to the centralisation of control, the posts are closer to each other.

One view is that the integration of a complex engineering system, which is in fact brought about in an automated plant, should lead to an integration of the men concerned with this system (P. Naville, 1958). After the fragmentation of work in mass production in which occupational work relations are reduced to the minimum, it is reasonable to expect some reconstitution of integrated work teams in automated plants. The need for the rapid exchange of information increases contacts and communication and calls for close co-operation at all levels. It will therefore be necessary to re-think the hierarchical principle of organisation and the conventional division of responsibilities (J. Diebold, 1952, 1957; E.P.A., 1957)

The trend is towards a concept of collective responsibility and towards teams with a more egalitarian structure than that of the traditional teams; the lower management levels will appear much more as stimulators than as supervisors (Crozier, Friedman, 1958). This need for a more integrated team with diminished hierarchic distinctions provides a solid technical basis for policies towards personnel integration. The trade unions seem to be aware of the risk of the closer social and psychological identification of the worker with management and with the values of management (B. Karsh, 1959; S. Moos).

2. CREATIVITY AND CONTROL

a) *Technician or operator?*

Automation has given rise to a great deal of literature overflowing with optimism about the humanising and up-grading of work, possibilities of the worker becoming a technician, and forecasts of cultural leisure. Such outpourings by journalists and lecturers are in sharp contrast, however, with the more fatalistic attitudes of workers affected by this change. One report speaks of the funeral celebrations held by office workers on the discharge of their colleagues whose jobs had just been replaced by the computer. The survivors are left to persevere in professional pride, hoping that they may yet prove to be irreplaceable and that no computer can do their work (I. Russakoff Hoos, 1960).

Will automation re-establish the skilled worker? It would be " imprudently optimistic " to believe that the reintegration of material work by machinery is enough to " re-integrate the man " (C. Barrier, 1962). Nevertheless, the machine monitor in an automated plant receives more technical information and has a wider view of the process of production than has the assembly line worker of the earlier phase (D.S.I.R., 1959) Although there is no essential parallel between the re-integration of a technical whole and the re-integration of work tasks, automation is at least a move in the direction of the regrouping of tasks rather than of subdividing them. But there seems to be no large scale re-grading of manufacturing workers (C. Walker, 1957; P. Naville, 1961). Rather than requiring an increase in skill, the work seems to call for qualifications of a different kind, mental rather than manual, nervous rather than muscular, and logical rather than craftsmanlike. The kind of qualification varies according to whether the operation is that of control, vigilance or maintenance. " Interest and curiosity take refuge in certain skilled maintenance tasks and in the design offices where the research technicians work " (P. Naville, 1958). The introduction of machines capable of carrying out the entire process of production creates new jobs and functions corresponding to new occupations or even to a new craftsmanship, or to a new class of top workers or technicians (G. Hartmann, 1956; E.P.A., 1959, F. Momigliano, 1962).

What are the new skills? Apart from those of the maintenance man, technicians and machine designers in automated plants, whose occupations are similar to the old-established trades, the new skills of vigilance and control are based essentially on responsibility rather than on experience or knowledge. The feeling of responsibility is evident from the results of surveys among the workers (Faunce, 1960; E.P.A., 1959; G. Giugni, 1960). The serious consequences, the cost of mistakes, and the impact of individual work on the whole process, are arguments constantly put forward by the trade unions in demanding that the functions of automatic machine operators should be re-assessed (E.P.A., 1957; J. Dofny, 1961).

Another addition to the occupational qualifications that go with automation is the need for higher intelligence and more theoretical knowledge (Gass, 1958; F. Momigliano, 1962). Industrialists are thereby obliged to develop new policies towards training and re-cycling, especially on the higher occupational categories (C. Walker, 1957; I.L.O., 1957; H. Abel, 1957).

At the workers' level, however, the gap between practical ability and theoretical knowledge tends to widen. The occupational status of automatic machine operators depends primarily on the modern machines which they manipulate without understanding them. But the workers are proud of them and identify themselves with them (Jalink and Gadourek, 1957; D. G. Osborn, 1959). The concept of re-integrated work becomes increasingly a matter for the engineer and a new category of technical manpower. The worker tends to become a button-pusher or a dial reader who has only a very hazy idea of what the machine is doing (F. Lantier, 1963; F. Pollock, 1957).

b) *Control or alienation*

Some forms of restriction of output or of wildcat strikes have been explained as reactions to the extreme boredom and lack of interest of routine work (D. Bell, 1956). It has been thought that automation would give back to the worker control over the machine. Iron and steel workers studied by C. R. Walker expressed pride in their control of the running of the machines. The same thought re-occurs in the works of various writers (J. M. Hund). But the plants described by Walker were only partially automated. The feeling of control is sometimes confused with the prestige conferred through the handling of a new plant.

Workers on automated machines in the automobile industry who were studied by Faunce (1960) have expressed a feeling of estrangement from the productive process in their new work. Automation seems to disconnect the man from the machines. The worker who made the automobile parts himself had the feeling of being a producer, but in the automated factory where he only presses a button and watches a panel of lights without seeing the operation carried out by the machinery, this feeling disappears. Now, the machine is the producer.

Occupational satisfaction is linked with the degree of judgement which a worker can exercise in his work or, where mass production is concerned, with the measure of control he can exercise over his efforts and in the use of his time. Where integrated machinery is concerned, the operations are accomplished without the application of any human skill, intelligence or control. The feed-back of the automated rolling-mill makes it unnecessary for the man to think, for the production line operates independently of the workers, who merely watch the scales of the measuring instruments. Mass production having dispossessed the man of the creative forms of work, he remains dispossessed by automation of control over his work (B. Karsh, 1959).

Former drivers of steam locomotives who have become drivers of electric trains find themselves disconcerted and sometimes discouraged at the reduction and transformation of their activities (P. Naville, 1961). The performance of work in the automated firm takes place at the level of the entire workshop, or even of the firm, and it is inevitable that, deprived of his work in this manner by automation, the worker will direct his claims towards improving his working life and towards an attempt to control the situation outside the occupational and organisational aspects of the firm, that is to say in the area of economic decision-making.

3. TRADE UNION ACTION

a) *From job to career*

Will the integration of production processes and the re-integration of work tasks inherent in automation lead to trade union action to protect the new trades? Mass production work has in effect uprooted trade union action from its traditional trade association basis, giving it an irreversible trend which the new forms of work will only emphasize.

The Italian trade unions have criticised job evaluation, demanding that there should be established, through multi-dimensional training, " an occupational qualification attaching to the person of the worker instead of to the job " (B. Trentin, 1962). In this, they saw a means of avoiding the precariousness of the mass production " job " without reverting to the defence of the traditional trades. The re-integration of the sub-divided mass production operations into a process " professionalises the work " (Nelson Foote, 1953). The unskilled fragmented jobs become a professional and technically specialised function. Such technical specialisation, however, is based on theoretical knowledge of a comprehensive nature rather than on the occupational experience which is specific to a particular group. Consequently, the claim of the new skilled workers points to the recognition of a status rather than that of a trade. Continuity and the progress of occupational life, together with its advantages and guarantees are sought for in the notion of a career. While retaining the professional idea of a continuing acquisition of skills, the career opens out a new philosophy of existence, that of a working life adopted as a vocation.

In contrast with the precarious and unstable " job ", the career is to be consolidated through legal measures which guarantee secure social advantages (stable income, guaranteed employment and a pension on retirement). These advantages of security and institutionalisation explain the psychological attraction of a career for American workers (N. Foote, 1956). The rights that were associated with a job become the workers' property and protect him against the hazards of occupational mobility which are increased through automation.

With their claim for a career, the trade unions have associated a claim for continued training or " re-cycling " (C. Brunetti, 1958) in which engineers and technicians are also particularly interested. The complexity and the speed of technological development have increased the value of academic education (Crozier and Friedmann, 1958). On the job training for a job, without acquiring a technical qualification, has become an obstacle to mobility. The miners in Southern France, being production workers with very specific occupational skill but no technical qualifications, are the group least willing to change their work (F. Lantier, 1963). For the same reason the American trade unions, confronted with the spread of automation, insist that the contractual procedures for re-employment should include guarantees of retention of grades, of redeployment and of new training (C. Killingsworth, in: G. Somers, 1963).

This trade union action in favour of the continuance of skills and job security appears to be leading trade unionism fairly rapidly towards claims that jobs should be transformed into careers (Archibugi, 1957).

b) *Work and Private Life*

The aspirations of the new skilled workers to an occupational career have already indicated the concern for a work life. With the trend towards the re-integration of work tasks, the necessity arises to evolve occupations which integrate the individual into a society, giving an aim and a meaning to his life (N. C. Morse, R. S. Weiss, 1955). Parallel to this, unskilled workers tend to preserve a private life independent of work and a freedom which work cannot swallow up. It is the concern for a " good time " as the antithesis of work; the making of the best use of spare time. From this springs the importance of claims relevant to shift work, night work and reduction of working hours (cf. Section IV).

This twofold concern for a career which is an attachment to work, or for compensation outside work to preserve private life, is not without its contradictory aspect. It points, however, in a common direction: the widening of trade union action from the occupational field to broader social and economic considerations.

c) *Towards political trade unionism*

Studies of attitudes towards technological change (E.P.A. research, C.E.R.P. research on reconversion, Yale technological project) show that workers tend to link their reactions to change with an appreciation of their life situation as a whole. Although the workers in the cases studied had no anxieties of their own concerning their employment, the majority thought that technical evolution would increase unemployment (Faunce, 1956; Mann and Hoffmann, 1956; Dofny et al., 1957; E.P.A., 1959; H. Popitz, 1957; Moscovici, 1962). In France particularly, despite the favourable experience of the change-over, the disquiet of the workers in the iron and steel industry has continued in the form of a conviction that modernisation will in time lead to an over-production crisis. Miners evaluate modernisation not only in the light of their occupational situation but also of their economic and social position.

The widening of the field of occupational problems is also a characteristic of the outlook of trade unionism in its new forms. The Italian trade unions link the negotiation of new occupational gradings with general economic aims. Similarly, claims put forward to offset technological discharges are supported by references to industrial reconversion and investment expansion programmes. The aim is therefore to influence the administration of firms and general economic planning (B. Trentin, 1962; F. Momigliano, 1962). The standpoint of the American trade unions is not different, for they link a full employment policy with the acceleration of economic growth (G. Meany, 1960).

The trade unions tend to widen occupational problems by considering them as social problems which should be inserted into the political-economic concept of change. Occupational problems concerning automation tend to be dealt with at the level of economic decisions and to be considered in terms of power relationships (cf. Section III). But parallel to this development, the " professionalisation " of work involves the desire of each occupational category (workers, employees, technicians and engineers) to have its own definite identity, which helps to uphold specific aims separately (James Stern, 1958). Rules develop in the unions for the mutual protection of individuals of a given category or grade vis-à-vis those who make use of their work or the categories above them in the hierarchy (E. C. Hughes, 1958). In regard to automation, therefore, trade unionism may be considered as torn between occupational (trade) unionism and political unionism.

CONCLUSION

As we have many times observed, the different levels of analysis used in this account of attitudes towards work (operating or job level, level of integration in the primary work group, level of adjustment to the organisation, and level of participation in decisions) are not independent of each other. It is not possible to explain either the study of restriction of output, or that of the reactions to job enlargement or to rotation of posts without bringing in these different levels of analysis. The inadequate measures taken by certain employers to improve conditions of work or productivity are sometimes the result of an attempt to isolate one particular level of social reality from the others.

Workers now do not react to the compulsions of the assembly line by blaming the work itself but by their antagonism and recriminations against the foremen and executives whom they consider responsible for their submissiveness. Similarly, miners do not hold modern technical mining methods responsible for lack of safety, but blame the requirements for intensive extraction and production. From conditions of work they go back to management's intentions in installing the new production system. This multiplicity of levels of reference explains why industrial psychologists, in their efforts to account for occupational dissatisfaction, find it necessary to lengthen the list of the needs of the man at work. Some of them quote as many as twelve (Schaffer, 1953). In addition to these mysterious needs, one psychologist studying industrial fatigue includes the judgments and beliefs of the worker and his whole system of values (Carmichael, 1947). The sociologists, for their part, have arrived at factorial methods of analysis in order to disentangle the causal associations explaining attitudes towards change (Jalink and Gadourek, 1957).

These different levels of reference cannot, in practice, be used all at once because they are at different points in a hierarchy. They become part of attitude systems. For instance, it was found during a study in the textile industry (D. Lahalle, 1962) that in their attitudes towards technical progress and productivity, women are more sensitive to increases in the work load, and men are more sensitive to the risk of unemployment. This might perhaps lead to the conclusion that the expectations of women stop at the level of work conditions and those of men at the level of guarantees of employment. Moreover, the resistance to job rotation shown by female workers in a telephone equipment workshop in Liverpool (G. Friedmann, 1955) and their satisfaction with routine tasks and modest but stable earnings, imply that their aspiration level differs from that of the utility men who find their occupational satisfaction in the variety of tasks and are proud of their knowledge of the different jobs in which they fill temporary vacancies.

It may consequently be assumed that differences between attitudes towards work found in occupations, categories and industries are comparatively independent of material working conditions. (R. Blauner, 1960). The relative importance of the various elements of the work situation in occupational satisfaction has encouraged sociologists to classify workers' behaviour in "attitude systems" (R. Bassoul, P. Bernard, A. Touraine, 1960) or in "types of attitude" (G. Barbichon, S. Moscovici, 1962). Occupational reactions and dissatisfactions are not isolated phenomena and have to be explained by the discrepancies between work situations and attitude systems or objectives in life. Any element of the work situation, wage level for example, will be interpreted differently according to whether it represents simply the gratification of an economic need or is interpreted by the worker as an indication of the recognition of his occupational competence. Any particular consequence of technical change will therefore take on a different meaning according to the individual type of attitude of the worker concerned.

Three types of attitudes have been distinguished (Barbichon and Moscovici, 1962):

The technical type of attitude, which concentrates on an evaluation of the physical aspects of the evolution of work (fatigue, safety, etc.) and which is generally not in favour of mechanisation;

The economic type of attitude which compares the advantages to the firm resulting from modernisation with its disadvantages to the worker, thus arriving at a positive balance in respect of the firm and a negative balance in respect of the worker;

The social type of attitude which arrives at a favourable conclusion concerning the occupational consequences of modernisation but remains critical of its social consequences on the working life and on the general social situation of the worker.

The consistency of these reference systems may explain in certain cases the lack of interdependence between attitudes and the experience of change. Semi-skilled workers react to the introduction of automation according to their customary standards, that is to say without even recognising the change in their work (P. Naville, 1962). The technical change experienced by the French iron and steel workers, moreover, has had no effect on their evaluation of general social-economic development (J. Dofny et al, E.P.A., 1957).

It will only be possible to draw overall conclusions about trends in changes of attitude systems after reading the parts which follow. Let us note, however, the greater integration of attitudes among the skilled workers for whom the occupational problems have an impact on their other problems: the occupational group is both a friendship group and a claim group, the senior worker being the leader and trade union delegate. The trade is the frame of reference for their attitudes.

As the organisation of work becomes separate from the performance of it, and as the decision-making problems become more remote, the different attitude levels become independent of each other. Restriction of output is separated from the claim to higher living standards, which is itself detached from work. The membership group (semi-skilled workers or adjusters) is different from the neighbourhood group and from the common interest group (workers as a whole). Hence, according to each worker's occupational objective, predominance is given to passive adjustment, to the conditions of work (semi-skilled mass production worker), or among the machine operators to the upholding of occupational rights against management policy (R. Bassoul et al., 1960).

With automation and the re-integration of work, occupational problems and social relations become increasingly determined by technical processes.

They are resolved at the levels of ergonomics and human engineering and not in the framework of negotiation. As the worker becomes more and more alien to the functioning of the machines and to conditions of production (P. Naville, 1963), the claim (and the attitude system) becomes a defence of the private life, not with reference to the occupational framework but to the general structure of economic and social life. Problems of change, as will be seen in Section III, are more likely to be dealt with at the level of broader economic decisions.

Section II

THE WORKER AND THE ORGANISATIONAL SYSTEM

INTRODUCTION

The introduction of a technical or economic change, which is the general theme of this report, may or may not involve an organisational change. We are only interested in this Section in those changes which lead to such organisational changes. The purpose of this Section, more specifically, is to examine the relationship between certain methods of introducing change, the types of organisation that may be encountered, and the reactions of the personnel to these changes.

The references made to theoretical discussion and empirical research are not intended to cover systematically the considerable amount of literature on organisation, nor to use it for purposes other than illustration. There is no intention, moreover, of building up a theory which can be applied generally to all types of firms or associations. This study is limited to industrial perspectives and is concerned in principle with the specific nature of certain situations.

Let us recall, at the outset, certain aspects of a question upon which the various schools of industrial sociology have repeatedly been divided. The point at issue was the degree of autonomy attributed to the organisation in industry. Three trends may be cited: *(a)* one which tends to over-estimate organisational autonomy; *(b)* one which doubts its existence; and *(c)* one in which there is no clear dividing line between what can be attributed to organisation proper and what comes from a nebulous and extended notion of organisation which implies various things simultaneously. We will briefly consider each of these trends.

a) " Plant sociology ", treating the firm as a closed world, has been vigorously attacked by Clark Kerr and L. H. Fisher (1957). Despite this and many other criticisms, for example by Dubin (in R. Tannenbaum, 1961) and Barkin (1955 and 1963), many social psychologists continue to over-estimate the autonomy of the organisation, partly perhaps because research with such an orientation is easier to finance and more readily obtains public approval. Feldman denounced the theory which tries to " turn the firm into a village ", for the firm has effects upon the society and the society has effects upon the firm.

These criticisms contradict the pattern created by Mayo and continued up to the present day by the so-called human relations school. This pattern, says Dubin, concentrates attention on the problems within the system and turns them into personal problems of adjustment of people to their work and to their position in the organisation. They are therefore considered solely as members of an organisation.

Kerr and Fisher also stress that the internal life of the firm and personal contacts among individuals are examined as if they were under a microscope by organisational sociologists. Even though they recognise that all problems do not originate within the firm, they believe that the solution for all problems ought, in any case, to be found there. Problems created by environment ought to find their solution in an adjustment within the firm. In this view, " the organisation is a social system with channels of authority, communication networks, a hierarchy of status, individual and institutional goals, human and material resources, an arsenal of incentives and penalties ". It is a system which provides its own justification.

b) The opposing trend amounts simply to a position that organisational problems do not, as such, exist. We shall not go into the question of what is being done along these lines, more particularly as the third trend is the most useful and has, for some ten years, shown promising vitality. It is an attempt to integrate all the relative elements.

c) To what extent and in which way, in practice, is an enterprise a matter of organisation? This question is obviously difficult to answer and a convenient solution would be to avoid posing it. Following the approach described by Feldman, by studying the influence of the firm upon society and vice versa, a kind of intellectual division of labour is created. Leaving to other researchers the task of defining the firm's contribution to the society, this group's efforts are concentrated on the firm, as having been permeated by society. This division provides a practical solution, but is frequently difficult to make. In part, these difficulties arise because it is not easy to distinguish between two different types of facts:

- what has properly speaking been organised, that is to say, has been consciously co-ordinated in relation to an organisational goal in the course of a process of organising, and
- that which results occasionally (simply as a pattern of momentary interactions, for example) or regularly during the operation of the firm (called an organisation), i.e. a functioning system.

In view of the diversity of research projects on which the argument will now be based, and to avoid confusion in connection with the term " organisation ", our attention will be confined to organisational sub-systems. In each illustration we shall make clear the type of organisation referred to.

Our method will be first to define various methods of introducing change and types of organisation. This outline will be useful for the later analysis leading to conclusions on the reactions to change. Such a classification will also assist in the analysis of specific types of situations developed in abstract research, such as laboratory experiments. The theories can then be fitted into the framework of such an analysis.

We shall therefore assume, to start with, that different methods of introducing change and differently structured situations produce different kinds of behaviour on the part of workers. We shall prepare the ground for a better understanding of the " reactions ", the " attitudes " and the " sentiments " of the worker or employee by considering him simply as a member of an organisation.

In Chapter II, we shall use the outlines both of the methods of introduction and the types of organisation as a framework or device for analysis. The conclusions on the acceptance of and resistance to change, based on this review, will of course remain provisional and hypothetical since the study of change itself has been very limited.

Lastly, in Chapter III, we shall deal with the tactical use of and the desire for change which has been even less frequently studied. When confronted with a change the initiation of which has been entirely beyond their control, workers and employers can attempt to utilise this change for their own ends in the constant bargaining for more influence. Specific groups, the total personnel of the firm, or even a wider group of wage-earners or workers in general, may also cause a change. Organisation is not always accepted as something established once and for all. The influence which the personnel can have on change will therefore be examined, but will be dealt with only briefly as the subject also forms part of Section III.

One might, of course, ask what is the origin of this " technical and/or economic change " which provides the starting point of this report. When is the organisation modified by this change, when does it remain the same; and when is this economic or technical change the outcome of shortcomings or of progress in the organisation?

These questions are obviously vital for the sociologist, but the answer to them can only be given after study over a much longer period than that usually devoted to research.

In the conclusion we shall once again broach a recent version of the problem of the nature of the organisational changes, and the relation of the general trend towards increasing rationalisation, which affects the organisation in its most human aspects, and the opposite tendency towards politisation.

Chapter I

THE INSERTION OF CHANGE

1. Methods of Introduction

We shall start from the standard assumption that the decision to change is made by management. What are the methods for introducing changes with respect to the personnel? It seems that at least three methods must be distinguished; introduction without warning, introduction preceeded by information, and introduction with participation of employees in the development of the arrangements.

Two experimental studies conducted respectively by Coch and French (1948), and Morse and Reimer (1956) may be considered as basic in this field. It is fortunate that each study shows two alternative methods of introducing change in comparable situations, together with the reactions of the personnel and indices of productivity. Many other studies, however, have touched on one aspect or another of the introduction of change. In this connection, a great amount of literature on conformity (Berg and Bass) and on manipulation (Bidermann and Zimmer) is particularly relevant.

a) *Introduction without warning*

Coch and French's experiment concerned the moving, within a manufacturing workshop, of women workers working on individual jobs. The workers were paid for individual output on piece-rates. Increases in output and wage were directly proportional. This is a standard practice, perfectly clear to both management and personnel. Although the work was semi-skilled, the average individual needed up to thirty-four weeks to acquire the skill necessary to produce sixty units per hour, which was considered to be the norm.

When the workers were moved without special warning they reacted strongly, either by leaving the firm, through absenteeism, or through resistance which was very clearly expressed in their production behaviour. An analysis of the figures of individual output showed that, even if no account was taken of workers who never reached the norm on the new job, re-adjustment was generally slow. A worker who was a good operator in her old job needed more time to re-adjust herself, that is to say to reach the norm of the new job, than a newly engaged worker took to become adjusted, complete her training and reach the norm. It was not, therefore, a problem of adjustment to work as such, but rather a question of psycho-social resistance to change. This, at least, is the conclusion reached by the authors after considering the level of productivity achieved when a method of introducing change was used which allowed for some participation by the personnel. We shall revert to this point below.

Obviously, introduction of change without warning can be accompanied by even more authoritarian measures. Gouldner has shown, for example, (Wildcat Strike, 1955) how the introduction of a technological change in a mine was accompanied by the strategic replacement of supervisors and other members of lower management who had not shown themselves sufficiently in favour of the change. He emphasizes the significance of this measure which contributed to arousing the hostility of the workers and to causing the wildcat strike, the reasons for which he analyses.

In the cases of the introduction of change mentioned above, the reactions of the personnel were overt. The situation may, however, be one in which management is so strong that the introduction of change without warning is followed by covert reactions only.

b) *Introduction preceded by information*

For a change to be introduced successfully, the people who are to be subjected to the change must understand the reasons for it. This is the fundamental justification for giving information which remains the basis of the so-called human relations techniques. Parallel with this view is the theory of organisation, which analyses the social system in terms of the theory of information.

The psychology of the individual confronted with the organisation is the subject of many studies of the human relations school. One of their merits was to describe the less immediately visible reactions of the individual. Summarising ten years of research on human relations, Tannenbaum, Weschler and Massarik (1961) drew attention to the fact that a change introduced without warning leads not only to strikes, restriction of output or high turnover of personnel. An individual may outwardly adjust himself while, for example, " paying a terrible price " through illness in a case of apathetic or submissive adjustment (ulcers, heart attacks, psycho-somatic troubles, etc.). Adjustment is the chief preoccupation of these authors, considering especially the individual's emotional interest in the organisation. The method of introducing change should allow the individual to " build his security ". This process is facilitated by preliminary information.

Many studies, especially those on office automation, describe the necessity for giving information (Jaeggi and Wiedemann, for example) in order to avoid the dissemination of a distorted picture of the necessary changes brought about by automation.

A research project carried out by Rogers and Beal is intended to measure the importance of personal judgment and the influence of the primary group towards the acceptance of technical change. The results obtained tend to qualify some exaggerated pleas made in favour of information. The influence of information as compared with other elements is not the same at different stages of the process of introducing change. It is greatest when the individual is just becoming aware of the possibility of change (61 per cent impersonal information, 37 per cent in personal contacts). At the time of trials, the ratio of impersonal information is already appreciably lower (impersonal 33 per cent, personal 50 per cent, individual judgment 17 per cent). When the installation has been made, individual judgment predominates (95 per cent) over impersonal and personal contact information (5 per cent).

c) *Introduction with participation in the arrangements*

Precautions suggested by so-called human relations programmes often go beyond mere supply of information to personnel. It has thus been considered advisable (R. Tannenbaum et al.) to allow individuals and groups to share in the process through self-guidance and control of the effects of the change upon them. Instead of simply introducing changes for which the group is not prepared, the group should be given an opportunity to suggest ways of handling the change and finding answers to some of the questions which arise. This enables it to adjust in a meaningful way.

The socio-psychological approach in favour of face to face relations has sometimes been exaggerated to a point where problems of power and authority are relegated to the background. Nevertheless, the importance of such considerations to the functioning of an organisation has, under given conditions, been established experimentally. In the experiment conducted by Coch and French, resistance to change was successfully overcome by allowing employees to participate in the introduction of the change. A parallel experiment conducted by Morse and Reimer (1956) also indicated the increased satisfaction of personnel.

The participation may be either a kind of pseudo-participation in a decision process—the decisions having largely been made in advance and the participation being purely manipulatory—or it may be a real participation in the introduction of the change, a considerable margin of decision being actually left to the discretion of the personnel.

Coch and French's experiment shows[1], on the basis of production figures recorded, that when participation was allowed, the resistance to the change by the workers ceased. The groups of workers who participated in the arrangements for the change through a representative chosen among themselves reached their previous production levels. Other groups of workers, moreover, all of whose members had been admitted to such participation, raised production even appreciably above the previous levels during the thirty days of the experiment. The effectiveness of these methods, even though their universality is doubtful, appears certain and points to the importance of the reaction of an individual considered as a member of an organisation.

Morse and Reimer's experiment was made among white-collar workers in industry, employed in four parallel divisions of routine administrative work. The aim was to compare those who were allowed to participate in the decisions with those who were entirely dependent on management decisions. Confronted with the organisational changes, the groups to whom a greater measure of autonomy had been granted were more satisfied; on the other hand, the groups under the more direct control of management were more efficient in terms of administrative costs. Here again, therefore, are variations which influence organisational operation in the event of change.

These experiments show, moreover, that such methods of introduction may or may not be to the immediate material advantage of the firm.

Naturally, examples could be given of changes being introduced with a clear display of force, or where the introduction has been elaborately manipulated. Some organisational changes have also been decided bilaterally; the initiation of the change itself, rather than only the decisions concerning the arrangements, being submitted for consideration by the personnel, or at least to their veto. A thorough and realistic study of the methods of introducing change, in terms of domination, manipulation and participation in the decisions, would probably produce interesting results.

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[1] This is not the place to present the serious criticisms levelled against this experiment, which is used for illustrative purposes (see for example Bell, 1960).

2. TYPES OF ORGANISATION

The need for clarifying concepts and research concerning organisation is made clear in many recent publications[1].

Here we shall use two types of approach to combine them. The first is contained in the now classic tradition of Barnard and the " administrative science ". The second builds on distinctions drawn from certain stages of industrial evolution.

a) *Workers' Role in an Administrative System*

The basis of Barnard's conception, like that of Selznick (1948) and many others who followed, is the decision to consider the " system of co-operation " as it appears in many situations (and, as Barnard explains, this might just as well be in the Middle Ages as nowadays) and " methods of promoting and manipulating co-operation among people ". The functioning of such a system depends partly on inducements to members of the organisation to co-operate and partly on the stability of the authority (Selznick).

The firm, in the general meaning of the word, is a complex comprising technical, economic and administrative systems. One phase of the research is concerned with the relations between these three systems (Touraine, 1957). Consequently, the so-called administrative or organisational system is in an intermediate position between the other two systems. It is a social system, to use the older term. It is set up to serve the technical and economic systems and its functions are largely determined by them but nonetheless it has itself a certain degree of autonomy.

Even this part of the firm, therefore, is not lacking in complexity. It is wise when studying it to distinguish certain organisational dimensions. We shall consider (with Burns, 1962) that the individual in the organisation will be involved in three dimensions:

- in an organisation of *work roles*, when he takes part in the achievement of institutional objectives;
- in an organisation of more or less advantageous *positions or statuses*, when he looks for various rewards and to his career in the firm;
- in an organisation of *hierarchy*, when he accepts or contests authority, influencing thereby the maintenance or the change of the structure of authority[2].

Taking the notion of administrative organisation literally, we shall be able to link this first approach with the second, which distinguishes certain types of organisation.

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[1] See more particularly: Reynaud and Friedmann, 1958; Crozier, 1961; Etzioni, 1961; Touraine, 1957 and 1962; Feldmann in C.I.S.C., 1962; Evan, 1963; Pugh et al., 1963; Trist et al., 1963.

[2] Towards the end of this Section we shall discuss the worker as belonging to influence groups which are organisations of " counter-authority ". Trade unions will be dealt with under Section III.

b) *Workers' role in historically-evolving administrative systems*

The process of industrialisation has taken the firm, historically, through many different stages. The study of organisational change which we are undertaking in this report can benefit from an analysis in terms of historical stages, as a means of understanding contemporary industry better. In order to link up this type of analysis with " the administrative science ", we shall take as a reference point the most clearly organised stage: that in which roles, careers and the hierarchy are most highly formalised. This bureaucratised stage (Bendix) may be considered as the intermediate stage. Logically, therefore, there must be added one stage (or type) which could be called pre-administrative, and a second one to be called the post-administrative stage, the latter being reached only rarely and partially, even in the large firms.

To simplify the discussion we shall outline three types or stages, describing each in terms of differences in role, position or status, and the authority structure. Here again, the references do not claim to cover the whole field of research and we can only give a few illustrations for each stage.

i) *The Pre-administrative Stage*

In this stage there is practically no organisation to fix the role and status of the worker or employee, or his relations to the hierarchy. In the absence of formal regulation, these matters depend on customary practice. In this period one finds the reign of the craft, of paternalism and the traditional system of authority.

Research on the old rolling mills (Durand et al., 1958) and numerous studies on mines provide the best and most detailed knowledge of this stage in which formal organisation is relatively lacking.

As noted by Weltz in his study of the supervisory function, the occupational skill of the individual, whether worker or supervisor, is of critical importance. What the worker does and when he does it depends on the supervisor's instructions. When the worker is asked what he thinks of the " system " under which he works, he replies by referring to the supervisor's craft.

The arrangement of work roles is non-schematic. It is the result of tradition and specific circumstances. This may facilitate periodical adjustment to changing requirements, but on the other hand makes it difficult to have formal rules covering careers and the exercise of authority, which depend largely on the foreman's decision. Discipline is based on personal authority, and this does not exclude favouritism and individual bargaining for private advantages. In the terms used by Barbichon and Moscovici (1962), authority under the old system is of the paternal type and presupposes a very large measure of personal involvement on the part of the individual. In the mine, very few matters are predetermined and much scope remains for the judgment and decision of the supervisor. Decisions on the operating level are taken by the leader who transmits his occupational experience to his subordinates and sees to safety. Trist (1963) says that the work roles become a " way of living ". We are still remote from the notion of a function, implying an impersonal role which can easily be taken on or abandoned and which is limited to the organisation as such.

This early stage is also to be found, of course, outside the mines and even in the former white-collar trades such as accountant, cashier and correspondent (Bahrdt, 1958). The role for example of the miner or accountant carries with it a social position outside the firm. What has been called modernisation, with

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various meanings, has led to changes and to an emphasis on organisation. Contrary to what has already happened in the evolution of production techniques, the development of the organisation still scarcely seems to have gone beyond an intermediate stage.

ii) *The Administrative Stage*

The professional organiser (or his equivalent within the firm) has intervened at this stage. There are now very detailed and elaborate, if not exhaustive, descriptions of work roles, formal principles of pay, rules for the selection, appointment and seniority of personnel and for hierarchic relations, that is to say for rights and obligations for all levels. Organisation and regulation have reached their zenith. It is the stage of bureaucracy.

In the mines modernisation has brought a measure of " depersonalisation ". " The bosses are easier and the orders are more strict " (Barbichon, cit.). The boss becomes functionalised; now there are several where before there was only one. In the opinion of miners, authority is exercised blindly because it is depersonalised, but it may undergo minor changes from time to time because it is the outcome of collective elaboration.

In a comparative table of the types of organisation in the mining industry (Trist), the complexity of the intermediate (semi-mechanised) varieties is clearly shown. The complexity and more generally the size of the work units are not unrelated to the development of the bureaucratic type of organisation (Bendix, Terrien, D. Mills). Obviously, it is more often found in big factories.

A typical example of bureaucratic organisation is described in a study of a French nationalised factory (Crozier, 1963; cf. the monopoly case). Formal rules are found governing more particularly the various aspects of career and authority. Concerning production, only the maintenance sector has escaped formal organisation (we shall revert later to the strategic analysis of discrepancies in the organisation of the factory).

It should be noticed that although maintenance is generally refractory to the increasing formalisation of organisation, precisely because its task is to remedy the unexpected—accidents, worn out components and repairs—it can nonetheless be increasingly rationalised (Weltz). Parts which wear out, for example, can be replaced systematically on the basis of previous experience. Progress in formalisation can therefore be made even in the case of such work.

There is no doubt, however, that industry generally does not attain a stage of complete formalisation. When speaking of the administrative sector of an industrial firm, people naturally think in particular of status and authority. It is well known that the organisers never cease to develop rules for payment, be it in the form of incentive payment systems or systems of job classification (cf. Marriott's excellent reference book, 1957). If the rules are formal and the hierarchy is fixed in this ideal type of bureaucratic stage, they have usually been decided upon unilaterally by management, by the State, and sometimes bilaterally through negotiations with trade unions.

Concrete examples of the next type, in which the traditional hierarchic structure is discarded, are still extremely hard to find. Nevertheless the evolution towards this type seems to have been heralded for a long time by the insertion of expert staff into the organisation, a development which is favoured by consultants of administration employed by modern business enterprises. Some studies already show how this form of organisation has been at least partially achieved.

iii) *The Post-administrative Stage*

The rationalisation of production has its parallel in the rationalisation of management. The roles remain predetermined but are defined in a different order, namely by objectives. As a result, the traditional vertical hierarchy is to some extent replaced by a new horizontal system. The personnel are still administered by formal rules but this administration is decentralised.

An example taken from a study in the automobile industry (Faunce) continues the earlier illustration concerning foreman-worker relations. Four automated sectors were studied. Workers speak of a very marked increase in the frequency of their contacts during work with the foreman and of more contacts than before with their fellow-workers. On the other hand the work groups tend to shrink and the distance between individual posts to increase. There are fewer posts, moreover, where the operator can have direct control over pace.

During another study carried out in a partly automated factory (Mann and Hoffman, 1960) it was concluded, contrary to expectation, that the worker is not isolated; nor does he feel the lack of integration into a group. The workers are in closer contact than before and they have a strong feeling of belonging to a group and of work in a common cause.

There is no real inconsistency between the ideas of increasing integration into a functionally determined system and of the increasing flexibility of much less predetermined relations. To avoid a detailed explanation, it should be remembered here that a dispersed arrangement of men in a workshop is not incompatible with frequent relations. Such relations can still be continued through " abstract " means of communication (interphones, cf. Durand et al., 1958) which facilitate rapid communication between individuals located at different points of a network. They make it unnecessary, moreover, to think each time of going up or down the hierarchy, for the engineer, the foreman and operator A or B all become just initiators or receivers of information.

In the part of his study dealing with the iron and steel industry, Weltz showed that the " functional solution " is not usually completely adopted. In modern workshops, some foreman-worker relations are of this functional type while the traditional relations still persist. The opinion of the specialist, an expert who is not integrated in the hierarchy, has decisive weight in matters of decision-making and the foreman has now no more than a purely disciplinary role.

A similar observation is made by Bahrdt in his analysis of the consequences of industrialisation on office work. It is only in his capacity as a " bureaucrat " that the foreman can now exercise his hierarchic authority over the workers. Work roles can be placed in a hierarchical order according to pure and simple technical necessity. The important contribution made by the first German studies in the iron and steel industry (Popitz, Bahrdt et al.) was that co-operation can take on many forms of horizontally hierarchised co-operation (" gefügeartige Kooperation ").

Bahrdt shows, in his white-collar study, that industrial bureaucracy may undergo a similar development in consequence of the rationalisation introduced by the adoption of the electronic computer. Here again the " functional cycles " assert themselves and break up the hierarchic system. In the place of the up and down lines of the conventional organisation chart, one finds a complicated network of vertical and horizontal lines connecting not only different levels but also positions on the same level.

As we have already seen, rules can still be fixed to govern the worker's remuneration and career in the various meanings of these words. In the Administrative Stage, those subject to the administration usually have no direct share in the preparation of the rules. In the Post-Administrative Stage, however, they are associated in the elaboration of a " contract ". This is shown by Melman (1958) in a pioneering book inspired by an unpublished work of Lawrence B. Cohen.

Like Max Weber who, in his penetrating study which appeared in 1924, spoke of a " labour policy of output ", Melman and Cohen conceive a labour decision-making process in regard both to production and to personnel administration. This is not to be likened to the levelling view of H. Simon, who likens an individual's decision not to leave the firm to the decision by a director to follow, say, a certain investment policy.

What happens, for example, when as a result of economic considerations, the firm decides temporarily to lay off a certain number of workers whom it may re-hire later? The management, in the administrative stage, may lay down rules unilaterally or apply a State-imposed rule. It may also, however, agree to contractual conditions for the lay-off in negotiation with the trade unions or at least accept their control at the time the rules are applied. In this case decentralisation of authority has therefore taken place, and it is just another form of dehierarchisation[1].

According to Melman and Cohen the following subjects more particularly may form part of the field for contractual agreements or control: decisions over the time schedule (working week, holidays, strikes, etc.), movements within the factory (promotion, down-grading, transfers), work load (output quantities), rewards (wages and fringe benefits, including overtime).

A good example of the post-administrative stage is given by Burns and Stalker (1961). It includes not only an advanced phase of the shedding of the traditional hierarchy but also of the strict description of roles. The case applies to design offices in direct contact with production, but it is doubtful whether, at the present time, this stage has often been reached even in research departments.

Burns and Stalker undertook to find out what was happening in a firm in the electronic industry which was faced with a rapidly developing commercial market and especially rapid technical progress. For this purpose, they found it necessary to go far beyond the usual analysis in administrative terms and have distinguished two types of organisation. It is the second type which is of more direct interest to us here.

Since modernisation is not merely a change from one state to another, but a development or an evolution which advances with increasing speed, the type of organisation should be suitable for unstable conditions and continuous change.

" New problems and requirements for action arise which cannot be broken down and distributed among specialist functionaries with clearly defined roles in a bureaucratic hierarchy. Jobs lose much of their formal definition in terms of methods, duties and powers. The individual job, and the ways in which it can best be discharged are both re-defined by interaction with others. This, in turn, means that individuals can perform their own tasks only in the light of their knowledge of the total tasks confronting their part of the organisation or, indeed, of their knowledge of the commercial and technical tasks of the firm as a whole " (Burns, 1962).

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[1] Co-determination (Mitbestimmung) as practised in certain sectors of industry in Germany is one of the other variants (cf. Dahrendorf's analysis of four studies on Mitbestimmung, 1963).

Burns concludes that interactions develop laterally as well as vertically. Communications between persons of different rank tend to take the form of " lateral " consultations rather than the " vertical " exercise of authority. The head of the firm can no longer claim omniscience.

We have only been able to give a brief sketch of these stages or types of organisation, but it should be remembered that the aim was to provide a basis for analysis, rather than a full description. However, this outline, with all its simplification, may suffice to convey immediately that there can be no simple answer to the question of the worker's reaction to organisational changes.

Chapter II

CHANGE AND THE DEFENSIVE REACTION

The results of research have often been contradictory and very limited in scope. Enough results have become available, however, to create a need for a differentiated scheme for analysing the introduction of a change and the workers' reactions in a factory in a concrete case.

It seems that, if the same methods are used to introduce change into organisations of different types, the workers' reactions differ according to the type of organisation in which they work. This does not exclude, however, that a certain method of introduction probably produces specific effects which it would be possible to detect if a great many cases of different types of organisation were compared.

Finally, there would still be differences in workers' reactions, even to one single method of introducing change and even in one single type of organisation. These would vary according to the level of participation of the worker: as an individual, as a member of a group or as a person committed to the objective of the firm (Touraine, 1962; Bassoul et al., 1960).

In this chapter we shall deal with research into workers' reactions, considering the workers as occupants of roles, statuses and positions in the authority structure. At the present stage of research, and in spite of the necessarily limited nature of the studies, it is of course impossible to separate strictly things that we would like to distinguish analytically. In Chapter III, we shall then deal with the voluntaristic aspect of organisational change: how the personnel can take advantage of a change which is introduced by management or demanded by the personnel themselves.

1. Individual Resistance or Acceptance

There is at least one case which presents no problem for organisational change. It is that of the worker who is in no way involved in the organisation: he is concerned only with a reward in the immediate and limited material sense of pay. Such is the case more particularly of certain married women working part-time in industrial jobs. It is therefore easy to foresee the reaction of this type of worker. Whatever the type of organisation or the method of introduction, an organisational change which does not affect the wage level or basic working conditions of the uninvolved individual will be accepted.

Another variety of this economic interpretation of individual reactions has recently become rather well known (Homans, 1962). The individual invests efforts and abilities in the firm and he expects a reward in return—his wage, his career and his satisfactions, whatever they may be in the firm. The reactions of this " neo homo œconomicus " depend therefore on the balance of his individual account of satisfactions. If he loses by the change, he will resist it, but he will

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accept it if his previous situation is maintained or improved. His behaviour is considered as rational, even though the individual himself may be unaware of this rationality.

A parallel conception is known as the Barnard-Simon theory of organisational equilibrium (March and Simon, 1958). The central assumption of this theory is related more directly to the organisation—in the broad sense of an operating system—than Homans' interpretation of behaviour (or that of O. Benoit who extends the analysis to trade union attitudes). The assumption is that each member of the organisation will continue to participate as long as he considers that the reward he receives is as great as, or greater than, the contribution he is required to make. He will assess these things according to his own scale of values and in terms of the alternatives available to him elsewhere. The conclusion is the same as that in the previous case except that it permits us to take a step forward in the direction of considering an operating system. There will be an equilibrium in the case of organisational changes of roles, statuses or authority, where the individual has found compensations. A minority of insufficiently satisfied individuals will leave and the others will accept. Otherwise, the system ceases to be in equilibrium.

To consider this type of acceptance further it is necessary to specify more particularly what change has occurred and what compensation was found. Was the change from very vague rules for describing work roles, remuneration or promotion to more precise rules? If this was so, is the workers' acceptance motivated by a greater measure of protection against arbitrary decisions? Was it obtained by means of a method of introducing the change which associated the workers with the development of the ways and means of making them?

The experiment of Coch and French mentioned previously showed that in one type of organisation a change of role introduced without warning led to a specific form of restriction of output. If we apply the contribution/reward system to this result, it will be interpreted as acceptance, although it is obtained at the price of a compensation at the level of production. This kind of interpretation is useful in trying to understand the actual functioning of a system. But if we wish to assess the change—and contrary to Etzioni's assertion (1960) this is essential—we have to find a reference point outside the system. If we choose productivity measurement, as in the study by Coch and French, it appears that there is not acceptance but resistance.

Another stream of studies, through a kind of introversion of the idea of reference groups (Merton, 1957), considers the individual as the holder of a number of roles or a number of " status " dimensions. If the organisational change affects one of his roles or one of the positions on a status dimension, a hypothesis can be formulated on the individual's satisfaction and behaviour.

Let us first take the problem of roles. It can be considered that one role normally leads to a series of other roles (role set). If then we start from the idea of a more or less formally defined role or role set, an organisational change which affects it may create discrepancies among roles or role sets. For example, a young rolling-mill hand on a mechanised line who is transferred to a modern continuous rolling line can still be paid, in a given case, at an hourly piece rate. His role, however, is no longer to produce the greatest possible quantity of a certain quality; only quality and care of the machines will count. Therefore, there is a discrepancy between his work role requiring high quality output and great care of the tools, and his status as an hourly-paid worker required to produce a certain quantity.

Conflict of roles, as such, has been studied on several occasions, more or less abstractly. Getzel and Guba, for example, suggest that we should distinguish between the extent of the conflict of roles and its intensity in the individual. Generally, the individual can resolve the conflict by adjusting himself to the ambivalence of the situation or by stressing one of the roles to the detriment of the others. The functionalist interpretation predicts that the system tends to lead the individual to readjust all his roles to make them congruent. There is therefore a force in the established system which works against change. Once the change has been introduced, the tendency for the balance to be restored will bring the individual to acceptance.

In order to understand the individual's reaction to a change in role a comparison can of course be made between the new and the old roles. The mechanisation and automation of offices have been studied on various occasions, tracing the evolution from a pre-administrative stage to one of fairly radical change. In a study on the introduction of a computer into office work, Jacobson indicates that the staff and junior executives expect the new situation to bring them " more responsibility " and that " more accuracy " in work will be necessary. Jaeggi and Wiedemann's analysis and also Bahrdt's, show that the rationalisation of an old employee's work gives rise to an understandable resistance in view of the loss of personal autonomy that it implies.

Reactions to the change to new roles may therefore depend on the mere " speed " of introduction. Jacobson says that the majority of the employees received the change favourably, though they thought that change came too quickly in the world in general. One method of smoothing out the introduction of a change consists in varying the speed according to circumstances (Smith, 1939).

Finally, it is necessary to appreciate the situation in the light of the degree of involvement of the individual in his role. Among the various scales of involvement which researchers have suggested, that of Argyris (1954) gives some idea of another American school of interpretation in terms of individual satisfaction. He distinguishes: the zero degree of fusion between the individual and the organisation (the individual has no expression of personality through the organisation); the number 3 degree, maximum fusion (the individual obtains all the expression he desires); and the intermediate degrees of adequate or not adequate expression.

Acceptance or resistance in the face of change depends then on the present and future degrees of fusion. In this regard, the psychological perspective can be linked with the analysis of social evolution. If it is true that evolution leads to an increasing control over nature by man, and that the dimensions of the types of organisation outlined above develop at the same pace, we can propound with Elias " a principle of progressive facilitation " (Elias 1956). When the individual was largely at the mercy of nature (survival) he could not foresee the phenomena to which he was subject, nor influence them to any marked extent. He lived in insecurity, and being vulnerable to insecurity he experienced powerful feelings; resistance was at its zenith. With the progressive increase of control, and improvement of the ability to predict—or shall we say to organise—involvement decreases and acceptance of change is thereby facilitated.

Let us now examine, not a set of roles which organisational change disturbs or transforms, but a series of statuses which, in different perspectives, also decide the satisfaction of the individual.

Various authors have studied the degree of congruence which the individual can find between his ranks in the various status dimensions (Homans, Lenski, Goffman, Merton, Landecker, etc.). The individual who has relatively more skill and relatively less income suffers from this discrepancy (Lenski) and therefore tends to favour a policy of change. The greater the prevalence of inconsistencies in status distribution for the individuals of a population, the more this population will favour change. This is increasingly so, says Merton (and Landecker), the greater the likelihood that change will raise the lower ranks towards the higher ranks. Frustration, moreover, will be a function of the proportion of higher to lower ranks. The feeling of deprivation is relative according to the reference chosen. The individual may be glad to be well placed in one respect at least, or he may be distressed to compare his high rank in one respect with all the other ranks he has which have remained low.

Applying these considerations to the problem of organisational change, we can say that such a change is generally more easily introduced among individuals whose ranks are rising, in one or more dimensions, at the time of this change, and especially in the case of the individual for whom the rise resulting from this change would increase the predominance of high ranks among all the ranks he occupies.

Although this version of the reference group theory is interesting, it does not yet provide any easily applicable solutions. Landecker warns that it would evidently be essential to know the importance of a certain type of rank (skill, for example) in comparison with that of others (income, etc.) and if possible the most acceptable combination of ranks.

Other doubts could be raised by asking how important the ranks are both inside and outside the firm. Wilenski has examined the shift of the worker's interest to the outside. If a worker gives his private life first place, or if in other words his level of participation in the factory is low, an organisational change will be more readily accepted even if this implies changes of rank.

We can now formulate a few hypotheses, thinking in terms of the types of introduction and of organisation outlined above. A change which implies an improvement in the worker's status is more easily introduced than one which merely maintains it. It is still easier when it leads from one stage of organisation to another. A change towards the administrative stage implies an improvement in visibility and security. A change from the administrative to the post-administrative stage indicates " progress in the objective foundations of authority " (Evan, 1963).[1] The introduction of an organisational change is more difficult, however, if it is isolated and is not an integral part of a coherent overall plan.

2. GROUP RESISTANCE OR ACCEPTANCE

The favourite field of social psychology is no longer the individual but the group, or the social system of interaction. It is as a member of a work group (Seashore), of an informal group (Homans), and of an interest group (Crozier, Burns, Sayles), that the individual reacts to change. The peculiarities of the interaction system, or the individual's organisational behaviour are sometimes analysed in a cultural, or in a situational perspective. We shall refer later to this area of research, which is at present expanding.

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[1] This is one of the six conditions which, according to Evan, facilitate the passing to the " voluntary " type of organisation. The others are: egalitarianism, which passes from political to economic institutions; reduction of differences in qualifications; the power of informal organisations which counteract employers' prerogatives; and the professionalisation of management.

This is probably the true field of organisational sociology, in which the organisation is seen as an operating system, covering at the same time things which have been organised in the strict sense of the word and also the vague sphere of the " informal ". The latter is more dependent on formal organisation, in fact, than is usually admitted (S. T. Udy Jr. 1959).

It is significant that the cohesion of the group is linked with feelings of tension at work (Seashore, 1954; this study covers 228 groups of between 5 and 50 members). Cohesion in this context means the attraction felt by individuals towards the group and their resistance to leaving it. Groups of strong cohesion make fewer complaints than groups of weak cohesion about lack of support by the firm. They are less inclined to think that they are working under pressure and above all they worry less.

This result will be appreciated when we recall the great importance given to worry in relation to change in many studies carried out chiefly by the human relations school (for example Selekman 1947, and Tannenbaum and Massarik, 1961). The hypothesis can therefore be formulated, that where similar methods of introducing change are used in similar types of organisation, the non-cohesive groups will tend to react with anxiety while the cohesive groups will accept or react negatively for other reasons, for example to protect benefits that they have acquired.

The interactionists (amongst whom are W. F. Whyte and G. C. Homans) define the group through observation or through sociometric questionnaires. It is rather significant that Atteslander (1959), a European disciple of this school, reproduces Ronken and Lawrence's research in his collection. This is one of the few inter-actionist studies to deal directly with change. The authors carried out a very systematic observation of a case of introduction of technological change. Resistance was not directed against the technological change, but against the transformation of the structure of inter-personal relations[1]. The problem, they concluded, is how to manage the social consequences of change.

Ronken and Lawrence's study demonstrates the futility of accusing the so-called informal groups of always being resistant to change. Generalisations at this level carry little weight. The authors, like those who emphasize the importance of informal group resistance as a general reaction to the introduction of change, are also pleased to suggest finally that informal solutions can improve the management of change. To use Daheim's (1958) expression: a process of disorganisation is often necessary before a change can be integrated into a restructured and re-adapted operating system.

The definition of the type of organisation which encourages the need for and the emergence of informal groups would be more useful. Friedmann (1956) puts forward the theory that one of the characteristics of automation may be that this industrial phase calls for a widening of relations between members of the firm, a less rigid definition of posts and statuses, thus allowing more play for the expansion of " human relations ". Bahrdt also speaks of conditions which are favourable towards an " unconstrained emergence of emotive impulses " when intensive rationalisation (in the white-collar offices) creates a social vacuum. Is it then the formality or informality of organisation that causes informal groups to be more important in regard to the introduction of change? This is for future research to answer.

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[1] At first sight this is a very commonplace result. Banks (C.I.S.C., 1962) considered it also necessary to stress the need to think " within a framework of the ' matrix ' of the possible accompanying variations of several factors " (in the face of change).

It is also important to recognise (with Sayles, for example) that groups are neither exclusively nor necessarily based on sentiment. In the early stages of organisational development, everything went together. The gang of workers in a manual rolling-mill was at the same time a work group and an interest group, as well as a cluster of individuals among whom ties of friendship had formed (Willener, 1960). At a later stage in the evolution of the organisation, informal groups may become separate from the functional group and also be distinct from groupings in terms of wage or career interests, etc. In the face of this development, one hypothesis is that such pluralism will diminish the intensity of the individual's involvement. A change in role may then easily produce a corresponding change in attitudes (Liebermann's experiment can be understood in this sense).

To say that a group is an interest group does not mean that this interest is always and directly economic. Gouldner (1955) shows that the matter of interest and " integration " can arise in a completely different way. In the semi-skilled stage, there are highly competent and indispensable experts who exercise a great influence on life in the workshop, but there is also hierarchy in the workshop, to which such experts do not belong. Hence, there is a dilemma. There is competency without allegiance and allegiance without competency. The experts are integrated in their own group, and the executives in the hierarchy. It may be added that their respective reactions in the face of an organisational change would probably differ. The experts would try to avoid administrative regulation, while claiming rules for their careers; the executives would uphold the position that they have already gained (hierarchy, seniority, etc.).

In an article describing the classic study by Mayo's team of researchers (Western Electric), Homans analyses part of the defensive reactions of the Bank Wiring Room—the workers' behaviour can be described as an effort to protect themselves against these changes. The autonomous interest group was constituted to minimise interference with the group by management. He quotes, moreover, a remark by Mayo, saying that these organisations greatly resemble the formal organisation of the trade unions. This pseudo trade unionism (W. Moore, C.I.S.C., 1962), or miniature trade unionism (Sayles) often takes the form of a defence of the autonomy not only of a group but of whole sectors, and can lead to issues in regard to the hierarchy as well as between sectors and between hierarchical levels (as shown by Crozier, in a particularly clear and systematic analysis).

In order to produce a plausible hypothesis concerning the reactions of such groups, data would be necessary on the method of introduction, type of organisation and degree of involvement. In this connection, Sayles' reasoning is of interest (Sayles, 1953). Contrary to previously established thinking, he goes so far as to recognise that even at a stage of strong organisation implying little personal involvement of the members, and also when the advantages and disadvantages of the situation are clearly visible, a change may generate a wave of offensives. The vigour of the pressure groups may be such that their interaction provokes more and more discontent. The reaction of the personnel is no longer merely defensive and may lead to something more active than conservatism. Instead of a static equilibrium, there is a danger of disequilibrium. The problem of the offensive use of change will be dealt with in the next chapter.

Comparative international research has in recent years banished the easy assumption which identified American organisational behaviour with universal behaviour. In his experimental field study, Liebermann showed that once a worker was promoted to foreman or elected shop-steward, he changed his attitudes towards management, trade unions and workers. These changes of attitude depending on role were apparent later; moreover, when the same individuals lost their promotion. One may ask whether this willingness to adjust, in its extraordinary completeness and rapidity, was not an indication of weak individual autonomy (“ other directedness ”, to use a concept of David Riesman, characteristic of the American culture). Such a willingness to be other-directed clearly facilitates change. In such a context, the reaction of the personnel would easily become adjustment[1].

A change calls in question certain compromises between opposite cultural exigencies. Such is the starting point of the situational analysis (Seaman, 1953 for example). The worker and the foreman are faced with the ideologies both of personal success and of equality, and with the values both of subordination and of independence, etc. It is impossible, therefore, to understand the reactions to a change without knowing the respective weight of such values.

Whyte and Williams report that, in factories with comparable technical systems, although American workers react negatively to close supervision and to a foreman who pushes production, Peruvian workers accept this behaviour pattern.

Pitts (1963) and Crozier in various studies show that face to face authority relations in France are full of problems and take place as rarely as possible. This has an influence on the operation of the organisational system. In an analysis extending to a study of the working of the French political system, Crozier suggests that this peculiarity is linked with a pathological attitude towards organisational matters, which blocks the introduction of change.

Three general hypotheses are suggested by Heintz (1955), to account for a favourable reaction in some cultures towards technical innovation or change generally. They are based on different socialisation processes. They are: *(a)* the child or adolescent is explicitly expected by his teachers, and more particularly by his parents, to let himself be guided by the standards of the social groups or categories to which he belongs, and especially those to which he will belong in the future. A person trained in this way will have a relative facility for adjustment to change. *(b)* the principle of authority existing in the family and internalised by the child is generalised (this indicates a certain lack of parental maturity) and applied to other social authorities. A person trained in this way will therefore have a tendency to submit also to the standards of these authorities, whatever may be their content. This is particularly important, in view of the poverty of various institutions in ideological content during recent developments. *(c)* if a person has strong feelings of inadequacy or insufficiency in regard to his own internalised standards and his diminishing consciousness of identity, he looks for help through the prestige of groups or categories other than his family. The adjustment mechanism of such people will be an abrupt and exaggerated identification with the values of innovation and of advanced ideas.

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[1] There is no doubt that the opinion of the group can work in the opposite direction. Many studies (e.g. Kelley) deal with this question. Kelley compares methods of transmitting an opinion contrary to that of the group. When such an opinion is communicated to an individual apart from his group, it is more effective than when it is communicated publicly in the presence of his fellows.

The workers' reactions to change, of which we have just been speaking, are all for the protection of vested interests which may be those of the individual or of the group. Sometimes we come across interests in a system which work in the direction of its survival. The " capitalism of the proletariat ", in the widest and not exclusively economic sense, may relate not only to the individual or the group, but also to the firm or company. The slogan, " My company first ", extends the idea of an interest group and may be the basis of a defensive solidarity of a wider scope (going as far as the industry, the sector of the economy or possibly the nation). We thus move away from the focus on the direct reactions aroused by an organisational change to a broader concept. The recent repercussions of the introduction of automation in office work show that basic interests may be expanded beyond the group.

In another type of analysis, Touraine (1962) suggests an independent explanation of behaviour in regard to the organisation. The worker can be considered otherwise than " as a member of an organisation ". He is not limited to social interaction. His position can also be considered in relation to work, that is to the creation of a product and the control of this product. Confronted with an organisational change, the worker can therefore accept or resist for other than the functional reasons that we have enumerated. Indeed, the worker's appreciation can be explained by his greater or lesser desire to create a product and to control the trade in or use of this product. In other words, acceptance or resistance in regard to organisational change can be understood not only in terms of individual satisfaction or of group interest but also in terms of social norms or values.

Chapter III

CHANGE AND ITS OFFENSIVE USE

Just as we tend when reading Max Weber, to stress primarily his solution in regard to hierarchy (of status) without mentioning his contribution concerning authority (more particularly his idea of " Lebenschance "), organisational sociology tends to favour the system of co-operation and to neglect that of conflicts.

To complete this Section, we must deal with the organisation from two additional aspects. First, there is a technical system, established to reach the organisation's goal, namely production. Secondly, there is the political system, or more precisely a system of authority. There is no clear dividing line between the technical structure and authority on the one hand and power for organisational or social groupings on the other hand. We shall therefore consider the perception of authority by the personnel, without trying to define its degree of rational legitimacy.

In his report on a research project intended to explain employee reactions to technical change, Popitz describes the various types of images of society found in his survey (1957). This typology shows that resignation or simple defensiveness are the basic attitudes of a part of the working population. (Such attitudes correspond to the defensive reactions analysed in the foregoing Chapter II). Nevertheless, there exist more radical attitudes in terms of individual strategy and of social struggle and even views of the worker " as a producer ".

Society in the first place may be viewed by the worker as a static or a mobile order. The worker who perceives a static order accepts everything that exists: it is " in order " and in an order (Type I). This does not mean, however, that he has an idyllic or harmonised conception of the social world. He believes that he must " snatch his share ". As to technical change, new technology is also accepted. This view does not contain any challenges. And technological change does not seem to imply social progress.

Workers who conceive of a mobile order think that technical progress is all very well when it is used in the worker's interest (Type II), but in their eyes employers in general utilise technical change in their own interest. This conception is characterised, like the preceding one, by a fair degree of satisfaction with the existing situation, but this satisfaction is not just acceptance of something remote and constant. It stems from approval at having reached a stage of development, and the conviction that other improvements are still possible. The attitude towards technological evolution, however, is one of limited optimism only half-way between enthusiasm and condemnation. The hope that a progressive social order will materialise is readily linked with a certain scepticism with regard to technological change, because of the fear of its effect on employment, etc. In other words, this is a voluntaristic orientation: social evolution is due to the initiative of the labour movement which keeps it in hand. Social progress flows from the improvement of distribution. The workers (" Arbeiterschaft ") make their contribution, and economic distribution is being made and will be made on more and more reasonable terms. The worker has great confidence in his own worth as a producer and there is no reference to exploitation.

The two other types of workers consider society as dichotomous. This seems unavoidable to some. There are the people " on top " and those who are " down below ". The worker is on the wrong side, " they " (the others) will always be stronger. Technical change is a " capitalist manœuvre and in general is of no benefit to the worker, who is more and more hard pressed " (Type III). Technical evolution is suspected of being an instrument in the hands of the ruling class. (The opinion of the same respondents is not as bitter as in regard to other matters).

The same unavoidable dichotomy, which implies individual conflict, is also found among another group of workers (Type IV). This type of worker does not expect any help in changing this condition of inferiority as a worker but he suffers personally from it. The solution at the very best is that of individual social mobility towards a middle-class position. Technical progress is " all right ", but on closer examination the disadvantages predominate[1].

Of all the replies classified, those of the " order " type (I and II) and those of the " dichotomy " type (III and IV) represented about fifty per cent each. In the whole sample the proportion of the replies containing a notion of individual conflict was 14 per cent; of a degree of voluntarism, one third; and finally of resignation, one-half. It is not in the details of the breakdown of these opinions, however, that our interest lies but in the fact that there are different types of ideas which cannot all be analysed together in the same terms.

1. INDIVIDUAL STRATEGY

From the standpoint of the system as well as that of the individual, conformist thought would ascribe the subordinate's lack of influence on decisions to his unwillingness to take part in them. A contrary way of thinking would be to consider that the subordinates are resigned because the system grants them little participation or even discourages it[2]. We may start from this illustration which shows resignation and hope. We may then say that hope consists chiefly, as far as the individual is concerned, in the perception of an opportunity for the improvement of his situation.

Individual hope in the case of the worker cannot be compared with that of a candidate for management of an industrial enterprise or State administration who expects to transform the " organisation " through his own personal activity once he has reached the coveted post. It is rather through individual mobility that a worker can rise from his present position to a less subordinate position.

We can also consider the strategy of the individual as a member of a group or social category which provides him with a " field of action " (Touraine,

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[1] Authors distinguish two other types: " reformist " and " revolutionary ".

[2] A recent experiment (Zander and Curtis, 1962) has studied the effects of social power on aspirations. Its result may be summarised as follows: the less the coercion, the stronger the aspirations.

1953). It is then no longer a question of individual strategy, since we enter upon the field of social interaction with which we shall now deal.

2. SOCIAL OR GROUP STRATEGY

In Popitz' illustration, the most clearly voluntarist workers are those who view the social world as a moving equilibrium. They are not necessarily optimistic. They know that the employer can use change in a way which is contrary to the workers' interests. They also know, however, that changes can be strategically utilised by workers. Such changes provide opportunities for workers to take the initiative towards social progress. A relative improvement in the workers' position can be obtained, through a struggle for influence, particularly in the field of income distribution. The absence of the idea of dichotomy in their social conception probably predisposes them to think of the struggle in terms of relative improvement.

In the general report on the international study on technical change in the iron and steel industry, covering six European countries (Banks, Reynaud) and of which Popitz' report is a part, many favourable attitudes can be observed. These are, of course, overall attitudes in which reactions of many different kinds are encompassed. Certain advantages are anticipated as a result of action taken by the trade unions. The less conspicuous struggle of " trade unionism in miniature " arising from the pressures by groups, categories and sectors in firms, is also relevant to the hope of improvement aroused among workers through the prospect of a change. On the eve of organisational changes, the worker tends to expect some personal advantages, as in the case of the introduction of co-determination in Germany (Institut für Sozialforschung, Frankfurt 1955). The Frankfurt study cites 67 per cent of hopes of this kind before the change, falling to 9 per cent after the change. Confrontation with reality after the change may cause the abrupt collapse of such optimism but it has nonetheless influenced the action at a given moment.

In Sayles' analysis, the strategic groups are those which use every method for advancing their interests, going so far as to withdraw their support from trade unions, other groups and management or, on the other hand, to conclude alliances with one or the other to act as pressure groups. The stakes are the various benefits which can be called economic. The analogy with national political pressure groups recalls, however, how things work in the struggle for influence. As we have already gathered, Sayles is aware that, as soon as a certain intensity of conflict is reached among the groups, or between groups and management, such activities are a threat to the equilibrium of the organisation (in the sense of a system operating adequately in regard to its purpose). They may be in the direction of a transformation of the organisation. In other words, such offensives are partly of a political nature. There is a possibility, moreover, that the group in its struggle for influence may take advantage of organisational changes to promote its interests. It may even exert pressure towards changes, or initiate them by strong action[1].

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[1] Three empirical examples of the use of organisation changes and of workers' claims using changes that they initiated can be found in the analyses carried out in the iron and steel industry for the High Authority of the European Coal and Steel Community (Lutz, 1958). Lutz shows the importance of the hierarchisation of wages as among departments of the same factory or even between factories (Lutz, 1962). French researchers showed in a parallel study how " waves of claims " were triggered off by such discrepancies. (Durand et al. 1958)

Empirical studies have too often dealt exclusively with emotive problems and with group conservatism in a general way. There are relatively few studies available of the type we have just indicated, which should doubtless be associated with the study of trade union action.

Crozier (1961) put forward a possible synthesis. The influence exerted by individual members is necessary, partly in order to provide the co-ordination needed to achieve the organisational goal and partly to satisfy the members' private aims which lead to a certain degree of satisfaction. The organisation (in the sense of an operating system) is the result of a compromise between the exigencies, shall we say, of " technical " and " fractional " aims (those of a group or category in relation to the organisation). The pursuit of private interests is inseparable from the common interest, and vice versa. The offensive in regard to organisational change arises therefore through disfunctions, which are contained moreover in any system, although in different forms.

In the State monopoly case studied by Crozier (1961), the maintenance worker category concluded an alliance with one of the engineer categories. These two categories are strategic, because with their occupational knowledge which, as " experts ", they avoid disseminating, they play a game of influence and improve their situation in the formal organisation. A new kind of equilibrium is established. Through their game of influence, these groups have caused a change. The new equilibrium, once reached, can itself be challenged again by external interference or by environmental pressure.

Burns (1961) points out that although micro-political activity brings various individuals and groups in the firm both into competition, and into co-operation with one another, this activity is not openly recognised. The only approved means for advancing political interests (in the firm) is to present these in terms of efficiency and the firm's success. There is therefore a problem of legitimacy.

The struggle for influence which Burns and Stalker (1961) studied in a form of organisation resembling a voluntary association can therefore present two aspects. Rivalry can be stimulating, and it becomes an almost inevitable part of the functioning system. But it can also result in too marked a deflection of influence to the benefit of a fraction of the members of the firm. This implies a judgement by the actors or the observers of the functioning system (for example in terms of output, profit, etc.), or a social judgement of the actors in a perspective transcending the organisational framework.

The meaning of organisational change in terms of the struggle for influence has been explored in a research project. This project was chiefly concerned with the development of one form of industrial organisation, the payment system, in the French iron and steel industry and in the iron ore mines (Dofny et al., 1962). It appeared (Willener, 1962) that those workers who perceived the firm and society as a dichotomy were also those who favoured organisational changes in methods of payment. They interpreted management's influence exercised through the system as abusive, that is to say as fractional and not functional[1].

It would of course be desirable to combine the observer's and the workers' judgement of the struggle for influence by selecting as a reference point one or more social goals on which there is consent, or else a relation to a value (in the Weberian meaning of " Wertbeziehung "). This last variety of analysis was used, in terms of work, in the studies directed by Touraine to which we shall refer briefly later.

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[1] We have related this interpretation with the analysis of status crystallisation (accumulation of low statuses for this category of workers). For a similar interpretation, see Goffman (1957).

It should be mentioned that the political meaning of authority in the organisation appears not only in the form of the frequent " employer class " interpretation. The dichotomy between " we " and " they " can clearly be applied in the social image to the more or less obscure power of the bureaucrats. Moscovici (1960) points out the antagonism shown by the worker to the organisation in a nationalised industry. The worker still talks of exploitation but is now thinking of the " bureaucracy ". In the same way the miner can find satisfaction in the modernisation of the mine while he bewails the (indispensable) increase in the number of engineers and technical executives.

We are, it seems, at the crossroads of the social image implying a political interpretation of the organisation and the social interpretation in terms of work. Moscovici adds, in effect, that he has found among workers interviewed a disapproval of unproductive people which, in its positive aspect, symbolises the high value placed on the creative work of production.

In Popitz' work, it is the most voluntarist workers in the collective sense (Type II) who are extremely imbued with the importance of their contribution to industrialisation, " You give the money, I give the work and the idea ". This evidently exaggerated expression of the producer's self confidence—he thinks not only of giving his efforts but also of suggesting technical improvements—is nevertheless a real sign of motivation towards organisational change, all too rarely studied.

Bernard (1962) distinguishes three levels of the " will to create " and shows, on the basis of metal-workers' own analysis of their work (ironworkers, operators and maintenance men) how they understand evolution. For our purpose the operators are the most interesting group. Their work has a distinctly administrative character and they are also a strategic group in Sayles' meaning of the word. The operators have to know how to overcome difficulties and how to handle the machines, or in other words, how to add to the work organisation an indispensable element of regulation which is not to be found in the formal system of rules.

When the group of operators goes on strike—the workers interviewed spoke of several strikes by their group—this is always based on the desire to rationalise the system of means. These workers take the same active attitude towards the organisation as they do towards their work. They supplement the formal organisation which has not provided for everything they have to do and which cannot, in fact, foresee everything. And they try to increase the degree of rationality of the formal organisation. This, therefore, is a case of an advanced type of organisation, post-administrative according to our typology, because the work roles are not formally planned but are assumed by the worker himself. It is not surprising that this group wields a large amount of influence. It is aware of this influence and intends to make use of it in the course of strikes and discussions. It is a group which makes the most both of its key position in the workshops generally, and of its skill which includes a knowledge of non-formalised work.

In this type of research (see also Bassoul et al., 1960), interest in interactions between man and man and between social group and social group gives place to interest in the interaction between men and social groups on the one hand and work on the other. The importance of such research lies in the further stimulation of the study of change. It enables more complete explanations to be given of acceptance and of resistance in regard to change, as we have already noted. It contributes, moreover, and this is perhaps more precisely its purpose, to the explanation of the desire for change in a generally neglected sense. It may be that the worker demands more influence and an improved rationalisation of work in disinterested terms. He may be an element of progress in the broadest sense, and not of social progress alone.

CONCLUSION

It is often stated that organisation becomes less political and more technical, that is to say that it is tending towards a social technique with its own laws which are recognised in practice. Can it be said that the evolution of organisation is moving essentially in this direction?

It appears that the technological system as such is tending to be dealt with more and more objectively, and that this objectification goes further and further, so as to include co-ordination of roles and arrangement of statuses (hierarchy of ranks, of wages, etc.). If such a movement is taking place, management and personnel administration have become testable, measurable against results, that is to say by their adequacy in relation to the goals pursued. To discover if and how a general movement in this direction is going on, parallel to industrialisation, a study on a broader basis than is at present available would of course be necessary.

Under these conditions, the sociologist is led to speculate, more particularly by using models or types which he has created. One general point is often stressed: in organisation there is no one best way. The corollary to this is less often advanced: that better knowledge of personnel administration also banishes the idea of the arbitrary. Organisation is not at the organiser's complete discretion; some solutions are appreciably better than others.

On the basis of previous experience and of a general knowledge of the " technology of inter-personal relations " (Moore), we can in principle make an approximate estimate of the most adequate functioning system for the attainment of given aims. Different organisational methods with various types of advantages and disadvantages can all lead to it. A more or less satisfactory compromise between the various goals (production, personnel satisfaction, market) may be chosen today and changed tomorrow.

Increased rationalisation, a general hypothesis of evolution, is more immediately plausible when two widely different types of organisation are compared. There is clearly an immense difference in rationalisation between the kind of organisation found in a manually operated rolling-mill, and in the plant and office administration of a large integrated iron and steel works. In the latter, a broken roller is no longer examined with a wrinkled brow, indicating the long but comparatively unscientific experience of the craftsman. Research departments are available with graphs and statistics, tests can be made and accumulated knowledge mobilised. At this level of administration, loss of time, errors and even labour troubles can be localised. The manager has only to wait for the perforated cards to pass through the machine before he has full data available. Admittedly, it is still necessary to determine with which results such types of organisation can be used most rationally and usually a case study is still needed. The general movement of rationalisation and objectification, however, seems to be plausible on a long term basis, even if more questionable when similar types of organisation are compared. What, then, is the reply that we should give to the specific question posed in this section? Assuming that organisation is effectively rationalised from the different points of view of conscious co-ordination of work roles, of rewards in the wide sense and of relations with authority, does the introduction of organisational change become comparatively easier as rationalisation becomes more complete?

It seems that the following prediction can be made:

a) Change is more difficult to introduce in situations where rationalisation has created great coherence than in situations where discrepancies produce internal conflict;

b) The situation is more favourable to the introduction of change where rationalisation is swinging the balance in its favour, for the " modern " aspects of the firm are then becoming the reference point and there will be a tendency to make the other aspects conform;

c) The situation is less favourable to the introduction of change where it is a matter of an isolated modification, for in that case the reference point is the " old " context.

Rationalisation itself may well imply a devaluation of political elements of the organisation. But the latter is perceived in a variety of perspectives by the social actors, management, personnel, and the trade unions, who may, or must, use this organisation for non-functional ends.

As authority becomes more and more objectively based it is less arbitrary and therefore less open to discussion, except those aspects of it which are outside the perspective of co-operation in production. We are defining authority here as the limited exercise of the power of mobilising social forces to attain the organisational objective.

If this is so, generally speaking, then rationalisation should have closed the door to bargaining in the micro-political world of the firm. In practice, however, it appears that there are still two ways open to a politisation of the organisation. One results from the suspicion that the system favours certain organisational or social categories. The other is a problem of policy—the orientation given to the common activities.

The optimist will always stress that the improvement in production techniques and in personnel management produces results which benefit everybody. He believes that there is a variety of manipulative techniques within reach of everyone in the organisation and that their use therefore becomes legitimate.

The pessimist will always insist on the dangers of advanced management techniques, saying that this is not management but manipulation. He will describe these techniques not in terms of the need for co-operation, but of the abuse to which they may be put by management, and will therefore conclude that they are illegitimate. The probability of finding this pessimistic view among members of management, personnel and trade unions may increase, in a given firm or community, and their charges of misuse of influence may become a permanent source of conflict which politicises the organisation. The rationalised organisation is a means but it is utilised by people and its utilisation is perceived by persons with complex roles who are far more than members of an organisation.

Organisation, as a means employed towards one or more ends, gives the partners a possibility of mutual control, the criterion being whether the organisation is adequate for the pursuance of the current objectives. The staff or the unions may consider it inadequate. It may be challenged in the name of rationality, or in the interest of a partner or a category expressing criticism.

Finally, it may be contested not on the means which is the organisation itself, nor on its use in the interests of a social category, but on the end pursued in a more general sense. It may be thought that the exercise of authority has become a technical matter, something more rational and more transparent. If so, this would allow clearer comparisons to be drawn between authority and the ends pursued in the decisions which could therefore become a subject for dispute.

It is obvious to the sociologist that the political elements of organisation cannot be understood unless the fiction of the integrated and isolated firm is abandoned. The same thing applies, moreover, to the understanding of change. The hypothesis with which we will conclude this study of organisational change assumes two extreme situations in which change is difficult to introduce. They are the case of strong domination by one social actor over another actor, and the case of the thoroughly integrated and harmonious firm. In the intermediate area, partly through conflict arising from the aspirations of those concerned for greater influence and various benefits, and partly through their will to carry out a task according to their conceptions, change will be sought and accepted.

Section III

THE WORKER AND THE DECISION-MAKING SYSTEM[1]

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[1] This Section was written with the assistance of B. Mottez, research fellow at the " Centre National de la Recherche Scientifique " in Paris, whom I would like to thank for his collaboration

INTRODUCTION

A technical change takes place, by definition, at the level where the work is done. In the foregoing chapters we have established, however, that the meaning of a change cannot be limited to its visible effects or to the reactions which they arouse among workers. A change can be divorced neither from the manner in which it is introduced nor from the system of authority which it reveals, nor from the way in which it fits in with other aspects of the work situation. In addition to the findings presented in the preceding section, a change must be recognised as a stage in the course of industrial evolution. Attitudes towards a change may therefore be considered as an expression of attitudes towards this evolution.

Change affects the worker as a man doing a job and as a member of an organisation—a firm—but at the same time has a direct economic impact on the worker as a wage earner, both as regards his employment and remuneration. Therefore, attitudes towards change reveal the prevailing conceptions about the technical evolution of a society, the workers' conditions and the class relationships within and outside the firm.

It is easy to see how technical evolution and the impact on the worker are closely linked, both in social practice and in social theory. This connection can be found in every industrial society, even in its simplest form, for in them one can find both a system of production and a system of social organisation, i.e. primarily a system of power.

The question that must now be asked, therefore, is what do the workers think of industrial society? Do they think that technology will determine the forms of social organisation and that the level of productivity determines the workers' whole situation. Or do they think that societies which are organised differently are completely different and that the meaning of technology depends entirely on the use that men make of it and on their relations with one another. Or do they feel that technology and the industrial relations system in a given society are mutually dependent? In reaching these judgements about technical change which, for the workers, is the most tangible evidence of social evolution, the worker will have to make assumptions about how this society is organised and how collective action is determined.

We shall not try to widen our field of observation to take in all the different kinds of change (technical, economic or directly social) which affect the work situation. We shall rather focus our attention on the changes which can be called technical, and try to understand how the workers define them and respond to them in their efforts to control them, as members of an industrial society and not simply as members of an occupational and organisational system.

Chapter I

WORKERS' ATTITUDES AND TYPES OF INDUSTRIAL SOCIETIES

Having considered workers' attitudes towards the occupational and organisational effects of technical change, it is now necessary to consider the worker as a wage-earner in an economically dependent position, and to examine how, in the face of technical change, the worker protects his conditions of employment and of remuneration. This subject seems to be the simplest, but in practice the most important of those reviewed in this report. It is fairly evident that workers, when faced with a technical change, as with any change in their work situation, react to a great extent in terms of their economic dependence, that is to say as persons who have little or no control over the decisions, over the consequences that these entail and over the remedies which might possibly be applied.

1. Attitudes towards change and evolution

It must be kept in mind that it is difficult to discuss attitudes towards change without considering the decision-making process with which it is closely inter-related. This preliminary comment, though brief, serves to introduce the first problem: what, in the eyes of the workers, are the relations between a decision and a change? The problem is more clearly stated if two opposite and extreme responses are considered. In the one case, the very existence of technical change and, hence, of technical evolution as an expression of rationality and economic or technical necessity, is denied. Any change is perceived as a manifestation of the employer's desire for increased profit. In this perspective, the employers' decisions are not conceived as being concerned with technical progress per se: some workers think that the capitalist system is simply based on profit-making and consequently it would be irrelevant for them to refer to technical rationality as a basis for their judgement of change. In the other case, technical progress is considered not only as a reality but also as an intrinsic goal. The workers' judgement as to whether the employers' policy is good or bad is determined by whether it promotes or opposes technical progress, from which economic and social progress are derived. Between these two extremes, many intermediate positions can be defined and have been described by historians and sociologists. The choice between a purely instrumental and a purely ideological perspective involves different conceptions of technical change.

For the optimists, change is a sign of progress and industrial evolution. Because it promises positive social consequences, technical change in itself can have only positive results. If it does not have them, or if the consequences are unfavourable, this is because an irrational or anti-rational power has intervened to break the natural link between technical change and its positive consequences. This leads to the denunciation of social power in all cases where it is considered as fundamentally irrational.

For the pessimists, on the other hand, technical change is not an element of overall evolution but a symbol of the employers' dominating power. It is judged not in reference to technical and historical factors, but in reference to a system of social relations. Attitudes towards technical change, in consequence, depend much less on its inherent nature than on the changes it introduces into social relations, specifically into power relations. Thus, we must not simply contrast those who have confidence in management with those who distrust it, but those who believe in progress per se and those who judge innovations in terms of the changes they introduce into the existing power relationships.

A fairly clear example of such a confrontation is given by French trade unionism between the two world wars. On the one hand is the communist inspired C.G.T.U., faithful to the spirit of Lenin as recorded in his famous article in Pravda of April 1918, in which he endorses the new techniques and, by implication, also Taylorism. In principle, the C.G.T.U. is in favour of rationalisation but is not convinced that it can succeed under a capitalist régime. The reformist C.G.T., on the other hand, is much less violent in its condemnation of capitalism and is convinced that the workers' pressure can bring about important improvements. It concentrates mainly on the strengthening of guarantees given to workers against the unfavourable consequences of technical progress and shows less concern for industrialisation itself.

These observations make it possible to state a first principle. Workers' attitudes towards technical change depend essentially on the extent to which the workers accept the goals of rationalisation and of economic development. Based on this principle, the following types of attitudes towards change can be distinguished:

a) Pessimistic Attitude. Its antagonism towards technical change is directed not against the general economic and social consequences of mechanisation but against technical progress itself, because it destroys the earlier occupational and cultural values.

b) Utilitarian Attitude. It judges technical changes according to their immediate economic consequences, without forming a general judgement on the meaning of technical evolution or on the nature of the workers' situation.

c) " Collective Bargaining " Attitude. It implies the absence of a fixed relation between technical progress and its social utilisation. It is confined to the search for guarantees or controls to assure the workers that technical progress is not used exclusively in the employers' interest.

d) Voluntaristic Attitude. It concentrates on the potentialities of technical evolution for social progress.

2. ATTITUDES TOWARDS THE FIRM

In passing from the first to the last of these types of attitudes, one notes a change from a very low to a very high degree of acceptance of the values of technical and economic development. This first principle of analysis leads necessarily to the consideration of a second, respecting the economic institutions, particularly the firms, which are intermediaries between the wage earners and technical progress. Firms may be considered either as instruments of technical progress or as groupings of purely private interests, whose primary concern is with profits or power.

For greater clarity, we shall distinguish here again four types of attitude towards the firm.

a) Antagonism. It implies the complete rejection of the economic system and of the objectives of the economic institutions.

b) Pragmatism. It accepts the idea that technical progress increases the productive capacity of the firm and therefore its ability to increase its payments to the workers.

c) Trade Unionism. It considers technical evolution to be an internal process of the firm and not a commodity which it buys and for which it must pay. The firm as such is not identified with this process of evolution. Its management is rather criticised for its " private appropriation " of the benefits of the change. Therefore, the role of the workers is to assume through their action that progress is of benefit to all groups in the firm.

d) " Political " attitude. It is based on the willingness of workers actively to participate in change. The firm is considered as the place for and the tool of change. It is no longer questioned, it is believed that basic decisions are more properly made at a higher level, that of the whole of the economic or even political system.

3. FOUR GENERAL POSITIONS

Although it is possible to combine these two dimensions of attitudes, we do not intend a systematic description. We shall confine ourselves to identifying the determinants of the four positions taken by workers in terms of one or the other of these dimensions, to define the meaning of each particular position.

The degree of personal involvement in the values of technical development depends on whether and to what extent a society relies on its own natural abilities for progress or, on the contrary, believes in the necessity of a voluntaristic policy of economic development to overcome the obstacles to its growth. One may predict that the positive evaluation of technical progress is likely to be most apparent in societies which face obstacles to their industrialisation and which therefore have to call upon the ideas of progress and technology to overcome the resistance of the traditional society.

Here we have the situation where belief in technical progress can develop together with the most pessimistic attitudes, as shown in our second classification above. If it is necessary to push a society towards industrial development, it is because its social structure is resistant to the evolution considered as necessary. In other words, the less control the workers have over their working conditions and, more particularly, the less access they have to social and political power, the more a society will tend to engage in industrialisation.

Social attitudes towards technical progress will be shaped by this contradiction. When development is fairly easy and when the institutions, the types of authority structure and, more generally, the social relations are well adapted to the requirements of modern industrial production, there will be little concern for development. The social problems will appear, at least at first sight, almost exclusively problems of competition and bargaining between the social groups engaged in this development, from which everybody tries to draw the greatest advantage. On the other hand, when there are great difficulties on the road towards progress, it can become a highly valued goal. In the first case, society is primarily concerned with choosing the ways and means for development. In the second case, it accents the ends, the objectives and the plans.

But beside these two principal types of situation there are naturally two other, less well defined, but no less important positions. In the first place, value orientation towards technical progress in some countries is slight and a consciousness of institutional barriers is at the same time strong. These conditions will produce an attitude of withdrawal and open antagonism. In the second place, it may occur in a country that there is a strong stress on the values of development as well as an awareness that the economic institutions are weak. This state is likely to occur particularly when the economic institutions, and above all, the firms, are dominated by the State, which is thus the instrument of industrialisation. In this situation, forms of social integration are particularly strong, whereas in the former case, they were extremely weak.

On the basis of these elementary types, the workers' attitudes towards technical change may now be outlined in the following terms:

1. In the first case, which we shall call *liberal*, there is less concern about general progress or evolution than about change. At the same time, there is no fundamental hostility towards the firm which appears to be concerned purely with private interests. Under these conditions, a coherent system of attitudes and social relations can be established, dominated by the idea of negotiation. It is easier to negotiate if there are no absolute values or principles involved and if there is a stronger confidence in the partner's flexibility and desire for agreements. The workers' attitudes towards technical change which (as an expression) dominate this relationship, are particularly well adapted to this situation.

In this type of society, the workers consider themselves faced with limited problems which must be discussed with management in such a way that they contribute to an adjustment to technical change, not only of their work but of the whole firm. As many authors have noted, the characteristics of this liberal type are the continuity of relations and negotiations and the systematic search for compromises, while at the same time there is very little reference to the requirements or to the principles of economic development. Just as management, when faced with a technical problem, makes decisions on the basis of chiefly economic criteria, so the workers or the trade unions representing them act within the framework of a " capitalism of the proletariat ", to use Daniel Bell's phrase.

This situation is therefore characterised by a great flexibility in attitude and in negotiation, and by a weak ideological involvement. But the result is not that the workers accept technical changes more easily. On the contrary, the absence of an economic and social policy in the trade unions results in a judgement of changes primarily in terms of their direct effects on working conditions. This leads to change being considered as something troublesome, and to a response in terms of routine, custom and safety. This preference for direct face-to-face relations, and for handling the most concrete and most immediate problems indicates an attachment to vested interests, to concrete categories and immediate advantages. The reformist craft trade unions, which correspond closely to this first type of situation, are an outstanding example of resistance to change.

2. In the second case, which can be called *dirigist*, or voluntaristic, the idea of technical change is clearly subordinated to that of the course of technical evolution. Nevertheless, institutions and customs offer great resistance to economic and social progress. The result is that technical innovations, far from being a subject around which discussions and negotiations are organised, become a principle on which claims are based. In a change against " waste in industry " (to use the title of a survey made by Hoover in the United States after the first world war) a labour movement can develop which is concerned with rationalisation and progress and opposed to a capitalism judged to be decadent and disorganised. This position builds on a single view of the society its infrastructure and institutions.

Italian trade unionists like B. Trentin, V. Foa or A. Tato (whose analyses are well presented in the large study directed by F. Momigliano) start from one general principle. The institutions of Italian society are backward in comparison with the technical and economic development of industry in the north of the country. The workers must not submit to the consequences of this backwardness. The state, the firms and the trade unions must therefore evolve an economic programme to protect the workers from the incoherence of the liberal system, from the risk of technological unemployment in particular, and from capitulation to the firm, which will take away every vestige of real independence they may possess and any hope of social change. The large firm is in effect the most powerful institution in this stage of rapid development. The trade unions should therefore adopt a resolutely modernist outlook, and at the same time develop an attitude of opposition to existing institutions and changes at all levels. These two requirements are combined in the proposal that they make claims for settlements before events take place in the firm; they seek agreements on occupational training, manpower recruitment, job descriptions and on wage payment schemes.

The studies made by S. Mallet in France, particularly those on an oil refinery and a large electronics enterprise, reflect a similar attitude. The workers pressing the greatest claims are those occupying the most central positions in the production process. Formerly, they were the craft workers and the skilled craftsmen. Now they are the technicians, including the new skilled workers incorporated in the " new working class ". The technicians in an electronics firm formed an " inter-trade union " which by-passes the rivalries and the ideology of the traditional trade unions. They have pressed vigorously on behalf of technical rationality or progress against the financial management of their firm, which is either hostile to a long-term development policy or incapable of carrying it out. Here we have the opposite extreme of a trade unionism which is distrustful of technology. The primary consideration in union policy is no longer the effect on the trade and the job, but the promotion of technical progress as a means for the transformation of the institutions.

It is important to emphasize that this position is oriented towards strong and unusual demands. The new course followed by Italian trade unionism since 1955-1956 was manifested in increased combativeness and increased participation in trade union action by young workers. But at the same time it is supported by privileged groups, as is suggested by a comparison with the first generation of militant trade-unionists, namely the craft workers. The action is led by an elite, working in the large modern firms where secure employment and high wages confer obvious advantages. These categories will try, through their strategic position, to obtain economic and occupational advantages which are worth while but which may result in even stronger integration in the firm and dependence on the employer.

These developments stress the importance of a problem which is common to the preceding situations mentioned. To speak of the workers' reactions to technical change is to place the workers and the trade unions in a position of opposition and non-responsibility in regard to economic development. To speak of the workers' positions in regard to technical and economic development is to acknowledge that the trade union may have a wider and more responsible role. How long can it remain in opposition? Is it not bound to become part of a system of political-economic decision and to become jointly responsible for the changes? Will it not, consequently, thereafter stir up revolt among those adversely affected by these great changes. such as workers of rural origin without skill, and workers belonging to declining trades and industries.

This remark is not intended to deny the possibility of such participation. It may suggest, however, that S. Mallet's idea (of this new trade unionism as a modern form of the traditional claim of " power for the worker ", still expressed in Italy in the time of Gramsci and the Ordine Nuovo) encounters many difficulties.

3. The third case is that of *withdrawal*, that is to say both of weak commitment to the objectives of economic development and of strong resistance to change. In this situation, there is more willingness to talk about change than about technical evolution and progress. The consequences of such change, however, no longer seem negotiable, particularly considering the autocratic attitude of the employers. A French survey (Durand et al., 1957) carried out in two stages in a large iron and steel firm before and after the introduction of much technical change, showed that pessimism was the prevailing attitude towards the likely effects of the changes. These findings were confirmed in other contemporary surveys. The image these workers have of their society can be represented by two curves. The one, rising, is that of production. The other, falling, but broken with sharp, short upward movements, is that of the economic and social status of the workers. This status tends to become worse except for brief periods (in France, 1936-38 and 1945-47) during which the workers feel that they are supported by a political power favourable to their interests.

A famous historical example of such a situation is that of the workers' reactions to the introduction of Taylorism in France (Pouget, 1913, Friedmann, 1946, and Collinet, 1951). While in the United States the new methods of work organisation were often accompanied by increased wages or shorter working hours, the French workers at Arbel and Renault were unable to find any economic advantage resulting from the new methods. Violent conflicts broke out, the characteristics of which were clearly phrased by the trade union leader Merrheim: " During the whole strike I have not heard a word of feeling, of reason, of conscience, of the dignity of the worker. Not one! No, not one! Fear, nothing but fear, of the informer, of the factory, of one striker of another ". And he concludes: " Capitalism has stifled morality among the great majority of the proletariat " ('Vie Ouvrière', March 1913, quoted by Collinet, page 44). This judgement is important. Like the great majority of the skilled iron and steel workers, founders, moulders and mechanics, Merrheim judged Taylorism and Fordism first of all to be occupational catastrophes, destroying the work of the skilled worker and thus the nucleus of the working class.

It is, however, not this aspect of occupational protection which is important here, but its counterpart, that is to say the impossibility of organising an active and positive social movement in a situation where technical progress appears to the workers as nonsense. Merrheim does not merely identify himself with the craft workers who are losing their last battle. He understands that, in the social conditions in which they find themselves, the new workers cannot be truly demanding and give way to what he calls, " immorality ". In this situation, it is scarcely possible to talk about workers' attitudes towards technical change, because these changes are not evaluated, judged or analysed. The social conditions for an analysis do not exist. The worker is alienated in the fullest sense of the word. He is separated from himself.

Such a situation also calls to mind an earlier period. The most interesting fact of the study in the French steel industry is therefore not so much the traditional attitude but the evidence of the signs of its transformation not towards decreasing discontent, which would fail, but towards creating conditions for future real conflicts, the opposite of systematic withdrawal. The technological change however, did not in fact have unfortunate consequences on the whole and, more particularly, did not lead to workers being discharged. This led to the recognition among workers that there were rational justifications for the change, which took its place in technical evolution. It also led to the agreement that these consequences, because they were not irremediably catastrophic, could be discussed. From then on, the way was open to negotiation which, although conducive to conflicts and even to possible breakdowns, was far removed from the non-communication or the withdrawal that preceded it.

4. The last case, that of *integration*, arises when a positive image of economic development is associated with the idea that firms are not institutional obstacles to social progress but merely organisations for discharging their productive functions. To find examples of this trend we would have to go to Yugoslavia, Poland or Israel. To include this view, we should have to extend the framework of this report considerably, for the problems posed by this type of situation would deserve a separate study. We shall only say that this type of attitude is not an ideal and problem-free solution. In the Western countries, it is closely associated with experiments in workers' participation in management, which developed after the first world war and more particularly after the second. During the wars, the desire to expand production was shared by the majority of the workers and even more so by their representatives. The normal functioning of industrial relations, moreover, was usually governed by the State. Joint production committees were set up. The British joint production committees of the last war were taken as models in particular for the production committees set up in Algiers by the Free French Government. These were continued in some cases, as in the Régie Renault, until 1947. Numerous labour-management committees were set up in the United States (de Schweinitz, 1949, and Riegelmann, 1948). After the war, joint consultation machinery was set up in Finland, France, Germany, Italy, the United Kingdom, and other countries, and in the German coal and steel industries it went as far as co-determination (Mitbestimmung). British joint consultation was studied by the Liverpool research workers under the direction of W. H. Scott, and German Mitbestimmung has been analysed by many authors, particularly by Theo Pirker and his associates, by the Social Research Institute of Frankfurt, and by Ralf Dahrendorf. These experiences of participation have been presented as a whole in an anthology edited by M. David and discussed by A. Touraine. The combination of co-

determination in matters of working conditions, on the one hand, and claims, on the other, is always difficult. In the United Kingdom, Scott has shown clearly how the joint consultation bodies arouse the suspicions of the trade unions—who wish to retain complete freedom of manœuvre in negotiations, especially those affecting wages—and at the same time the indifference of the workers who tend to consider them as a new category of management, or as allies of " them up top ".

Two trends can develop. Where the integrating forces are relatively weak, as is the case both in Germany and in the United Kingdom, unions' demands and management are separated in the traditional way. The trade unions again take over their role of opposition, and management has benefited by the experiment in that it is more up-to-date and has improved its methods of personnel management. Here we come back to the liberal model of traditional conflict which Dahrendorf considers to be the logical outcome of the system, once the early illusions are dissipated. Where, on the other hand, the integrating forces are powerful, that is to say, where the trade unions cannot return to an attitude of direct opposition, compromises are reached to make the manner of introducing the changes more acceptable to the workers. These negotiations, however, take place within the firm and result in a considerable amount of economic irrationality, as is shown in the several studies we have on socialist firms. The most obvious development is the appearance of hidden under-employment, or unemployment in the firms. The discharge of workers is avoided at the cost of a disfunctional system of bureaucracy.

If this solution cannot be reached, the workers' reactions are expressed through clandestine or overt opposition, in the form of restriction of output, absenteeism, thefts or wild-cat strikes, or the formation of workers' committees.

To summarise, speaking of attitudes towards technical change introduces two ideas. The first is the one presented as a choice between change and technical evolution. The second recalls that economic institutions can, to some extent, form a screen between the worker and his work, so that it is not clear in every case whether there are attitudes scientifically towards work itself. It is this critical analysis which has led us to distinguish four types of situations and therefore four types of position towards changes in work. Naturally, several of these types may appear at the same time in a concrete situation, but it is useful for the analysis to begin by distinguishing them clearly.

Chapter II

THE EVOLUTION OF WORK AND THE CHANGE IN WORKERS' ATTITUDES

Reactions to technical change, as analysed in the first Section of this report, can only be understood in reference to the evolution of work, the movement from a system of work based on the autonomy of the craft worker to a system characterised by a predominance of organisation and therefore by the ascendancy of the office over the operative work. These observations prompt us to consider the evolution of work from still another point of view. In an early stage, the workers defend their occupational autonomy, while in a more advanced stage of industrial evolution they defend rather a combined socio-economic and occupational status. This means that, in passing from the first to the second situation, occupational as well as economic-social considerations in regard to work tend to intermingle or even to unite, whereas before they were only complementary to each other. Just as the transition from purely occupational to social-occupational attitudes has been described, the shift from purely economic to socio-economic attitudes must be considered here.

In an archaic work situation such as described by Leroy or Slichter, the subject of technical change occupies a very important place in the workers' thoughts and actions (it fills the greater part of Slichter's book) but the workers' attitudes do not seem to be determined by occupational factors. The craft to be protected is the subject of the conflict, but the workers' reasons for engaging in the conflict are very largely economic. On the other hand, in an advanced industrial society, for example, when automation problems are in the forefront, the subject of debate is chiefly economic. It is primarily a problem of manpower adjustment, but the workers' claims tend to be expressed in terms of technical progress and the expansion of the forces of production. These shifts are easily explained. In what we call the craft system, the trade is only vaguely perceived as a personal activity in the service of the society's objectives, or in other words on behalf of technical and economic development. On the other hand, the trade is very clearly seen as the ability to obtain a specific job and wage. The social meaning of the trade is more economic than technical, while the personal experience in work is chiefly occupational. The discrepancy between the self-image and the social meaning of an action determines the whole system of workers' attitudes in this archaic situation.

If we now look at a society dominated by the problems of automation and economic development, the worker, and especially the skilled worker, the technician and the specialist, consider themselves primarily as participating in a collective and creative work and in a body of scientific and technical knowledge. Society gives their occupational activities primarily a technical meaning. In another sense, the worker considers himself in the first place as a consumer, with a certain level of income, education or prestige. In other words, in the old work situation, the worker contributed as a production factor, an economic reality, and was gratified by occupational rewards. In the new work system, highly rationalised and mechanised, the worker contributes technical ability and receives in exchange an economic standard. This reversal must be borne in mind. The collective social problems of work are, in an early stage, more economic than occupational. It is the private experience of work, the satisfacin work, which is primarily occupational in character. In an advanced industrial society, the social problems of work are of a technical-occupational kind. They are called rationalisation, productivity or development, and it is the private experience of work and the satisfaction in work which are controlled primarily by socio-economic elements.

1. THE PROTECTION OF THE JOB APPLICANT

Whether the social climate is reformist or revolutionary, the labour movement is primarily oriented towards job control or, more precisely, according to Barkin's expression, towards the upholding of " workers' rights on jobs ". These rights are only important because they ensure a minimum guarantee to workers on the labour market. Just as the employers rely on the barriers that protect the middle classes to ensure that their interests prevail on the labour market, so the workers try to distort to their advantage the relation between supply and demand, more particularly by restricting applications for employment. Why is it, then, that technical changes are often considered to be dangerous? Not only because they threaten traditions and occupational training and experience, but chiefly because, once this occupational capital has been destroyed, the worker finds himself in a position of complete inferiority on a labour market dominated by large reserves of manpower and wide variations in economic trends. It is in the interest of the worker to prevent change, in order to strengthen the positions he has gained. He tries to do this, according to the circumstances, by one of three methods which Slichter has distinguished:

a) by obstruction, that is by directly opposing the introduction of new techniques;
b) by competing with these techniques, that is by accepting a higher level of production in the traditional technological setting in order to make it more competitive;
c) by controlling the new work methods, by trying to determine the occupational standard, the length of apprenticeship, and the number of workers required for the new equipment or new methods.

Labour's defence against new techniques is properly speaking neither occupational nor economic. It is not simply a question of protecting a trade nor directly of ensuring employment nor of warding off technological unemployment. It is a defence of non-economic interests which come into the bargaining relationship. The trade is used—not rationally but irrationally—as an instrument of defence.

This occurs because the problems most frequently brought up by trade-unionists or by observers relate to highly skilled trade workers. These workers and their organisations control only limited sectors of the labour market. They are constantly threatened by competition from non-trade-union firms, from unskilled labour, particularly of rural origin, and from new products appearing on the market. These are therefore brought under labour protection which is strengthened by the practice of negotiating as directly as possible. In these negotiations, the workers' occupational capital weighs heaviest, whereas in a more general negotiation in the open market, this trade value is likely to be lost. Labour attitudes are dominated by the awareness of scarcity. Hence the importance of the " make-work-rules " mentioned by Slichter, which are to be found underlying certain current claims, for example for the retention of two men at the driving position of an electric train, although signalling and driving techniques enable one man to do the job without any risk. But scarcity is not a simple quantitative fact. It is obviously not the lack of work in general, at least during the decades of 1890-1910, a time of great industrial expansion. Scarcity is not the opposite of abundance, but the obverse of predictability. Work is scarce for the worker because there is no institutional link between the offering of work and economic development. The market and the economic variations intervene between the two. For the worker, this means irrationality. The worker, therefore, can only reply with a counter-irrationality, the upholding of procedures and customs often rendered obsolete by new techniques. This has led many craft trade unions, such as those of cigar-makers and glass-makers in the United States, and that of the moulders in France, to actual suicide as organisations.

2. AGAINST THE SCIENTIFIC MANAGEMENT

The development of large-scale industry usually resolves this first type of conflict to the detriment of the workers' interests. The simple contest between the trade and the market becomes impossible from the moment that the trials of scientific management and work organisation are progressively introduced. The ruthless application of Taylorism led workers to revolt in the first place against what seemed to them a new and powerful technique for exploiting them. Hoxie's report in 1916 is nearly as violent in tone as the indictments of the French trade-unionists.

However, as G. Friedmann (1946) points out, Merrheim himself is soon forced to alter his position. In the same 'Vie Ouvrière' in which, in 1913, he published violent attacks on Taylorism, he does his best in 1914 to distinguish the rationalisation of work from its social utilisation. While profit and speculation remain the goals of capitalist production, which are alien to rationality, industry must now rationalise its means, and this creates new problems. The trades and their traditions must become adjusted to rationalisation, and the workers' criticisms should be directed against the use made of the new techniques, against ruthless time and motion studies, against the mysteries of the suspect Bedaux method, against incompetence in matters of work physiology and work psychology. From then on, resistance is directed less against the changes themselves than against the methods employed to introduce and utilise them. The twofold evolution that we have described is clearly seen. The problems become more technical and the way is more open to negotiation, because discussion is focussed on methods of organisation and not directly and ruthlessly on the personal economic situation of the worker.

This evolution is inseparable from the growing importance of the major mass production industries both in the economy and in the life of the trade unions. Between the two wars, trade unions strove to penetrate the major industries—automobiles, rubber, iron and steel, etc. In these, competition was active and the problems of which the workers were most keenly aware were not those affecting the trade but those affecting the job: changes in qualification, labour displacement and new organisational methods. Opposition to change becomes impossible when change is essential to withstand competition and thus to maintain employment. The passing from craft trade-unionism to industrial trade-unionism is therefore accompanied by a fundamental change in attitudes towards technical change. The control over new engagements, such as sought or practised, becomes impossible in industries in which the majority of the workers are unskilled. The norms have no longer their former degree of permanence. It is therefore necessary to gain control over the changes, rather than to insist on the retention of acquired advantages. Finally, no trade union, or at least none of those in the large firms of the mass production industries, has the necessary means available to fight action initiated by management on a technical plane. To remain effective, action must therefore be on a limited scale and the old references to a co-operatively organised " society of producers " must be abandoned. The sweeping nature of technical changes makes it impossible to have resort to this static ideal which was favourable to technological and economic conservatism. At the same time, management may be persuaded to realise that time and motion studies, because they are in fact very rough, cause incessant conflicts which can only be settled through organised discussions with the trade-unions. (Lester and Aronson, 1950, analyse the functioning of this type of negotiation).

Schematically, it could be said that the great problem at the first stage of this evolution was one of employment. It is now becoming one of pace and incentives. It is no longer a problem of the contribution of work and of the total remuneration, but of the relation between effort and bonuses. The more technical progress and productivity are stressed, the more the technical aspects of work are treated as elements of an organisational system. The importance given to work organisation and its methods goes hand in hand with the recognition of technical and economic progress as a legitimate social principle. This split is the most characteristic fact at this stage of industrial evolution. The worker is both conscious of *(a)* the technical changes which demonstrate the power of the technical organisers and those employing them, and *(b)* of technical progress which he begins to perceive by contrasting it with economic disorders and crises. The split is so real that the labour movement has rarely managed to assume the twofold offensive/defensive attitude which is actually required of it. Three main positions, in fact, have been taken up:

a) Some carried the split to its logical conclusion, taking up a purely oppositional and defensive attitude for the time being and relegating the reconciliation between technology and society to the future, to a post-revolutionary or to an affluent society.

b) Others tried to negotiate the introduction of new methods and abandoned all reference to the society's general economic problems, except some verbal subtleties like the difference established by the Weimarian trade unions between an economic democracy (the distant goal) and the democratisation of the economy (a more limited and more concrete goal). But they assumed, in fact, no intervention in the capitalist mechanism. R. Goetz-Girey clearly traced the meanderings of this system, of which the tragic inadequacy in the face of the great crises was categorically denounced by A. Sturmthal.

c) Finally, others thought that co-operation between the trade unions and management for the introduction of new techniques and more particularly of methods of work organisation, constituted in itself an economic development policy, eliminating the need for State intervention, which would ruin the system of collective bargaining. This position, which assumes a more decisive acceptance of the existing régime and economic system, was adopted in the main by the American trade unions.

The change of policy of the American Federation of Labour in the twenties was sudden and complete, as is shown in the reports on this organisation's congresses, more particularly those of 1921, 1923 and 1925, and also in McKelvey's analyses. In practice, after giving up plans for nationalisation of various industries, especially of the railways, American trade-unionism interested itself directly or indirectly in a whole series of plans for co-operation between management and the trade unions in regard to the modernisation and rationalisation of firms, in particular the railways and the textile and clothing industries. These plans were often given a considerable amount of publicity, especially the Scanlon plan in which W. F. Whyte sees an example for industrial peace, which he regards as the goal to be achieved. During the nineteen-thirties, the trade unions in the iron and steel industry tried to reconcile a policy of co-operation with an active campaign for the establishment or protection of the trade union (Cooke and Murray, 1940, and Golden and Ruttenberg, 1942). These plans never aroused any great enthusiasm on the part of the trade-unionists. They were subjected to lively criticism by certain officials and observers such as S. Barkin and R. Dubin and have, in fact, been of no lasting importance. In the textile industry again, the failure of the trade-unionism campaign in the South showed that a policy of co-operation does not remove the employers' misgivings. Co-operation between management and the trade unions with a view to improving productivity met with some success only in sectors experiencing economic difficulty: in firms subject to keen competition, which was dangerous for both the firms and the wage earners, and in cases where collective negotiation resulted in patterns which had been elaborated elsewhere instead of in agreements independently arrived at. Under such conditions, according to Harbison and Coleman (1951) it is possible to pass from armed truce to working harmony. One may particularly recall the very special conditions of the clothing industry where small firms without capacity for economic resistance and without the means for innovation faced the opposition of powerful trade unions.

3. AUTOMATION AND FULL EMPLOYMENT

A new type of situation appears as soon as the concept of rationalisation determines not only the work organisation and the administration of the firm, but also the selection of the production goals. The acceleration of scientific and technical progress, the size of the basic investments and the progressive diminution of traditional forms of competition induce all industrial companies to transform their production techniques in a more and more voluntaristic way. Technical progress and economic development become matters of primary importance. This leads to a marked decline of the idea of technical change. It becomes impossible to judge an innovation by reference to a given state of the technical, economic or social system, which was implicit in the notion of change. Attitudes towards an event are more and more based on the anticipated lines of development of the society.

A study made in a large French firm concerning the social consequences of the introduction of a computer, shows that the introduction is not the outcome of a precise economic calculation, but is based on an optimistic gamble on the expected growth of the firm. Similarly, the employees' attitudes are not based on the expected consequences of the change, but depend on the meaning assigned to this change. The attitudes depend on the employee's opinion about management in general and about the rationality of its action in particular. In other words, the changes are considered less as transformations of a personal situation than as decisions by management for the entire enterprise. They are interpreted less through their effects than through their causes.

It is obvious that every worker will be interested in the consequences for him of a technical change. The foregoing remarks mean, therefore, that judgements of the causes and judgements of the consequences of a change are even more profoundly dissociated than before, or, to revert to expression already used, the consequences of a change are evaluated as a function of their effects on the workers' occupational status and career, while their causes are appraised in terms of general economic and social planning.

We are now very far from the interdependence between economic problems and occupational problems which characterises the first of the three stages that we had passed through. The individual can no longer protect the trade which was his chief asset on the labour market: he can only protect the continuity of his working life. He expects his trade union representatives, or the political forces influenced by them, to ensure a harmonious economic development. At this level, unemployment still remains the main problem, but the threat that it represents has changed in nature. It no longer arises from the irrationality of the market, but from the defective adjustment of the institutions to the exigencies of technical and economic evolution. Criticism is no longer aimed at the lack of equilibrium of a social system, but at the inadequacies of the mechanisms of decision-making. It is no longer economic in nature but political. The result is that the problems raised through the introduction of change becomes less important and easier to deal with.

In the previous stage of evolution, the firms appeared to be responsible for the introduction of new techniques and methods. To discuss the introduction of changes was, in fact, to discuss their meaning. Therefore, the importance of workers' participation in the management of changes could not be very great because the trade unions, which had generally to co-operate with management in the choice of the means of change, were in disagreement with it in regard to the ends. On the other hand, in the stage at which we now are, the decisions go beyond the firm and are made at the level of society itself. Changes are brought about more and more by scientific and technical discoveries developed outside the firms, that is to say in research and design centres operating on a far wider basis than the firm. This greatly facilitates discussion. Personal, occupational and career problems must be discussed quite independently of the general social problems.

Experience in the United States illustrates how far this dissociation can go. Some trade union leaders, like W. Reuther, are clearly aware of the problems of economic policy posed by automation. J. Dofny has stressed the pessimistic view taken by the American trade unionists in respect of the social consequences of automation. After the illusions of the early years that they could handle the problems themselves, and since the publication of the documents assembled by the Congressional Committee for the study of Automation, they became more and more aware of the need for State intervention, or at least for a national economic policy. At the same time, however, the system of collective bargaining works better and better. It channels the claims in a more specific way, dealing with them more directly and at the point where they actually arise, thanks to the progress made with grievance procedures. N. Foote can speak, in terms of anticipation and not of a Utopian scheme, of the professionalisation of manual workers. The important fact is that this theme is linked only very loosely with economic policy problems. The problems of professionalisation and of full employment, which S. Barkin, among others, stresses with considerable force, are in fact independent of each other; on the contrary, in the early stages of the evolution which we have just followed, the trade was inseparable from its value on the labour market.

It cannot be said that the old idea of the worker's right to his job is replaced by that of his right to his employment, for the worker of today is attached to occupational rights (extending beyond his job), to his career and to his working life as a whole. In addition, he knows how much these rights depend on an economic policy of full employment. In this case, employment is not a personal problem solely. It is the result of a system of decisions, which makes it necessary to consider it in a political perspective. S. Barkin (1963) summarised this new situation by defining the chief objective of trade-unionism as "a coherent concept of trade union action relating the elements of collective bargaining to political and community bargaining ". Managers and trade union experts are more sensitive to the general consequences and political implications of automation (Kassalow, 1959, or Faunce and Sheppard, 1956) but the workers or the militants are looking primarily for greater collective guarantees.

Chapter III

LABOUR STRATEGY

After having analysed the social aspects of the images about technical change in the first chapter, and the stages of dissociation between meaning and effects of change, technical and occupational status in the second chapter, we are now leaving the area of the images and conceptions in order to enter that of overt behaviour. Facing these changes which affect him materially and which show him to some extent how society functions, the worker tries to protect his interests, to take advantage of the benefits offered and to avoid the disadvantages. Various levels of behaviour can now be distinguished but it may suffice to consider those which social practice normally identifies and which correspond to well-defined and frequently-studied organised behaviour. The following levels will be distinguished:

a) informal behaviour, in which slow down is of particular importance;
b) small group behaviour at team or workshop level, that is to say at the level of shop-stewards, délégués or Vertrauensmänner;
c) industrial relations between management and trade union;
d) the labour movement properly speaking, considered not in its role of negotiator with employers, but in its effort to transform society and particularly its economic institutions.

It is not our intention to analyse in detail these vast social phenomena but broadly to answer one question: how do the different ways of presenting technical change influence the relations between the various levels of the workers' collective action? We shall only present ideas which will serve to introduce a type of research which should be developed.

1. DIFFERENTIATION OF THE LEVELS OF BEHAVIOUR

Let us start with the type of behaviour which is closest to the workers' attitudes as here considered; a behaviour which is originated by the informal group, namely restriction of output[1]. Restriction of output in the first place is what Taylor called idling. It is a directly economic behaviour and also an expression of what H. Behrend (1957) calls " effort-bargaining ". If the worker works quickly, the piece rates at which he is paid are likely to be reduced. Moreover, in a production system based on market demand which is subject to wide variations, restriction of output expresses a worker's awareness of the scarcity of work that we have already mentioned. Under these conditions, as Weber was the first to stress, there is no essential difference between such forms of behaviour as restriction of output, strike, boycott and general strike. In varying degrees, all these forms of behaviour mark a refusal to act in accordance with the dictates of a liberal economy, even though the employers are trying to transform the workers, or at least the high class workers, into small entrepreneurs, as B. Mottez (1962) showed.

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[1] We shall not revert here to the meaning of restriction of output as a sign of occupational resistance. This aspect has already been dealt with in a previous section.

Restriction of output changes its meaning when it becomes a response to the organisation of work. It becomes both an expression of group resistance to the organisation, as shown in the well-known observations by Roethlisberger in the Bank Wiring Room of the Hawthorne Plant (Roethlisberger and Dickson, 1939) and of a search for more satisfactory inter-personal relations and better developed mutual assistance (an idea indicated in particular by Robbins, 1948). It is also, according to the analyses of Roy, Dalton and the other collaborators of W. F. Whyte (1955), an effort by the group to control itself and to impose its own organisation, which is responsible for making claims, upon the firm's organisation. Lupton (1959) strongly emphasized this desire for autonomy.

The idea can be further advanced that restriction of output takes on a different meaning in the most highly mechanised production systems where the worker can do little to affect production. It probably expresses worker attitudes that parallel those which lead management to the fixing of wages at a certain level. As F. Sellier wrote in his preface to G. Caire's book (Caire, 1960), the principles traditionally used to determine the wage level are no longer effective in an automated plant. The link between production and wages is loosened and the wage level is fixed by comparison with other categories and as a result of strategic relationships, many of which are not formalised in negotiation. The worker or the technician (like the civil servant or the researcher) himself shapes the image of a " fair job " or a " fair wage ".

This is to say that the idea of restriction of output follows a development which is parallel to the development of the attitudes towards change. First it takes on a meaning which is both occupational and economic, closely attached to the individual worker, then it is defined in relation to an organisational system, and finally it becomes the symbolic expression of a judgement of society and economic institutions. During this development we must therefore expect to find the various levels of labour action—and consequently also of trade union organisation—becoming more and more differentiated.

First it is the shop-stewards' activity that becomes autonomous. Then the level of industrial relations becomes separate from the others, so that finally the " political " role of the trade unions, which in previous stages was mixed with other levels of activity, appears in turn as a special means of collective action. As this process of differentiation moves from one stage to another, the picture becomes more complicated, and the number of actors increases. At first it is the worker himself, the militant, who fills the whole scene. Then the shop-steward enters, followed by the representative (we like to distinguish between these two terms, as proposed by W. H. Scott, 1956). Finally, there is another person not clearly defined but whom we can call, with Ross (1960), the trustee. He acts on behalf of an organisation or group, not to transmit direct demands nor to negotiate a contract on its behalf, but to make its point of view known and to exert some influence in its favour.

At each of these levels, different problems are dealt with, corresponding to the various levels of reaction to technical changes that we have distinguished.

To clarify the general meaning of this development, it will suffice to add to this short analysis of restriction of output a few observations on the development of industrial relations, and especially on collective bargaining as it appears in some American research. Apart from the retention of the standard vocabulary and the institution, which are both misleading, the nature of collective bargaining in the United States has changed considerably.

In the beginning, collective bargaining as conceived by the reformist, Gompers, and also by the revolutionary, Griffuelhes, was a clash of forces. The refusal to accept State intervention was associated with a more general refusal to take a position on economic problems. It was during this period that labour resistance to change, particularly the struggle to retain traditional methods and over-abundant personnel, was most frequent. In the United States this resistance appeared most clearly among the railwaymen and seamen. Until recently, the struggle against the reduction of the number of jobs was a central principle of trade union action. In the United Kingdom, where unionism by trades, supplemented by the general unions, has retained its importance longer than in the United States, Germany or France, Cyriax and Oakeshott (1960) recall how important to many trade unions this subject still is today.

The work of Harbison and his collaborators of the Chicago Industrial Relations Center is typical of a more modern type of collective bargaining. The " armed truce " of which these authors speak has a place in the framework of firms and is responsive to their problems, whereas in the archaic form of bargaining it was the problem of the labour market that was considered rather than the problems of the industrial organisations.

In its turn, this type of agreement has become more and more out of date, not through a spectacular change in industrial relations, but through the development of grievance procedures and the creation of more sensitive machinery for dealing with claims. Negotiations therefore penetrate more deeply into the inner life of firms, as L. Cohen (1956) clearly showed. It is easy to understand that, at each stage of this development, the temptation arises to interpret it as a step towards industrial peace and towards co-operation and participation by the workers in the management of the firm. Harbison, however, like Scott and Dahrendorf, whose opinions have already been referred to, disagrees with this interpretation. What is to be seen is much more the development of what W. G. Sumner has already called "antagonistic co-operation ". It must be added, however, that logically such a development is only conceivable if the trade unions extend their activities also toward the fields of major social and economic decisions. If this extension does not take place, the tendency towards submission to the firm becomes strong; and if the trade unions do not surrender to it, there will be a great risk that it may become an element of bureaucratisation and rigidity in the firm and in economic life as a whole.

To summarise, this development tends to mark the difference between the various levels of labour intervention in the production process. Whereas restriction of output on the one hand and collective bargaining on the other previously represented an overall confrontation between wage earners and employers, they are now specialising and forming a hierarchy of levels of social relations which range from the protection of the worker to the upholding of the economy, passing by way of the improvement of industrial administration and the negotiation of employment conditions.

2. TYPES OF INDUSTRIAL SOCIETY AND TYPES OF LABOUR STRATEGY

The complexity of the situation makes it difficult to observe industrial relations systems which keep a harmonious balance between these different levels of intervention. In conclusion, therefore, it is necessary to return to our starting point and to see how each of the four types of societies which we distinguished in the beginning composes the various levels of intervention.

a) A so-called liberal society should favour, as both Dahrendorf (1962) and L. Coser hope, the institutionalised conflict and the free contractual relations between management and trade union. This will result in weakening constructive trade union action and its influence on major economic decisions and also in a considerable amount of violence in actions at the plant level. It is true that violent conflicts become rarer as the standard of living rises and as guarantees increase against insecurity and arbitrariness, as Ross (1960) emphasizes. Ross recalls, however, as does Lipset, how much more fundamentally aggressive American trade unionism is than European trade-unionism, at least in the countries that advocate an industrial democracy.

b) In a dirigist society, the emphasis is on trade union action in economic policy. Two situations are possible. The one would be that the trade union influence is very strong or—what adds up to the same effect—the trade union is closely associated with the forces holding economic power, and then the lower levels of trade union action dwindle. This would increase the risk that there will be a trade union counter-movement to resist changes (when considered to be unjust or authoritarian). The second possibility is that trade union influence is weak. In this case the union finds itself in a position where it either opposes society or more actively develops a totally new economic, social or political counter-model. This leads to the development of an action which is nothing but a radical claim, while having an eminently conservative and often anti-economic general effect.

c) This outcome is close to the third type of social structure, in which labour action can only manifest itself through a rejection of the work situation. Strikes or restriction of output are then preferred levels of labour action. This leads to the maintenance of the employer's autocracy in the firm, strengthened through the absence of real negotiation with the trade unions.

d) Finally, in a situation which could be called industrial democracy, a strong tendency towards integration into the company and towards a strong institutionalisation of the decision-making process, as shown in the study of the Manchester dockers carried out by the University of Liverpool, entails a latent discontent.

One of the best ways of studying trade union action, and more generally workers' behaviour towards changes affecting the work situation, would appear to be not to set up principles or general objectives but to distinguish models of action corresponding to types of situation. These in the first place should be analysed in regard to their determinants and effects but especially in regard to their functioning, that is to say, in terms of their functions and disfunctions. This would protect the student at the same time from both ideology and eclecticism. It calls, however, for greater development of comparative studies, like the excellent study undertaken under the direction of Galenson.

The sociology of work often attempts to isolate workers' responses to certain aspects of their work situation, usually because such segmentation facilitates analysis but sometimes also because the sociologist accepts rather naively the framework and definition of the problems suggested to him by the social facts which he is observing.

To deal with workers' reactions to technical changes in this manner may well limit the analysis to a formula which can be useful at the start but is dangerous when it comes to understanding the phenomena. The indirect utility of much of the work to which we have referred in this volume is therefore to inform us of the way in which a social group defines and analyses the social sphere or spheres in which its activity takes place. Rather than to accept that a thing or a fact exists, clearly and objectively defined from the start, in relation to which the individual or the group " reacts ", it is preferable to put this fact into a broader frame of reference, a pattern of situation, and to determine the reasons when certain notions or a particular type of segmentation are used, when others could be used just as well.

Section IV

THE WORKER AND THE COMMUNITY

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INTRODUCTION

The effects of technical change extend beyond the worker's relationship to his tools and to the organisation and authority within the firm. The break in the continuity of his working life has an impact on his life as a whole. He is obliged to accept a different future not only as a worker but also as a member of the community in which he has a specific social status and is motivated by certain expectations; there is no absolute dividing line between his life inside and outside the firm. Any change in one must also affect the other. Whether the technical change augments or diminishes the possibilities of occupational advancement, the fact remains that it affects the individual's whole social existence and modifies his social status. In other words, it affects not only the worker's occupational role but his whole social status and the meaning he gives to his life.

Consequently, whether attitudes towards change are favourable or adverse, they must be appreciated in the light of all that makes up the worker's behaviour, that is to say of the variety of his roles. The worker's reaction to change is not determined merely by his work, but also by the fact that he may be a head of family, a bachelor, young or old, living in a certain town and accustomed to a certain way of life. Modernisation requires him to accept a modification of these various roles. Some resistance is to be expected; the stronger his attachment to traditional roles, the less he expects from modernisation. In this case, a negative attitude towards change is quite understandable. For change to be acceptable, the worker must in turn have an open attitude towards the future; he must assimilate the idea that progress is incompatible with keeping things as they are and that change therefore has a positive meaning for him.

Now, technical change may take two different forms. It may entail merely the introduction of new work norms in the firm, as is the case when it involves changes in working hours or in jobs. Or it may take the form of a more radical change, as for example when, for reasons of modernisation, certain mines are closed down or when some of the employees are discharged as a result of the introduction of automation. In both cases, acceptance of these changes implies a predisposition towards mobility on the part of the worker. In the first case it is technical mobility; in the second case it is occupational or even geographical mobility. But acceptance of either of these two forms of mobility possibly implies that the individual has adopted a favourable overall attitude towards mobility.

But in what circumstances will the worker adopt a predisposition towards mobility and not a refusal? Must we say that modernisation necessitates a change of behaviour? The difficulty of answering these questions may be indicated by two opposing facts: by the resistance to the closing of certain mines in south-central France and the opposition to any form of transfer and, on the other hand, by the fact that in certain sectors the idea of change is fully accepted by thousands of agricultural workers who leave the land every year and go to the towns. In the latter case the change in behaviour is conditioned by a new behaviour tending towards change. Mobility is no longer viewed as being enforced, but as desirable, offering an opportunity for occupational and social advancement.

How can this new behaviour tending towards change be defined, and how can the negative attitude be analysed? They can be defined with reference to the worker's socio-economic situation and to his expectations. It is true that these two determining factors of behaviour are extremely complex in themselves. The socio-economic situation refers to the threefold relationship of the individual: *(a)* to a given social environment (community); *(b)* to an economic environment (labour market), and *(c)* to a cultural environment. His expectations, which define the way in which he is related to the socio-economic environment, vary according to the worker's age, sex, social or ethnic origin, etc. The positive or negative attitudes towards change appear, therefore, as the function of the relationship between expectation and situation.

Our analysis would not be complete, however, if we did not also consider the meaning of change in its relation to attitudes of mobility. Meaning is the word we apply to the convergence of the worker's expectations and the content of the change: where these diverge, there is lack of meaning. In this way we can throw light on the positive attitudes toward mobility which lead to an acceptance of change.

This conceptual framework therefore will quite naturally form the five levels of our analysis; in other words, the study of attitudes towards change is a function of:

i) social environment,
ii) economic environment,
iii) cultural environment,
iv) expectations of the individual,
v) meaning of the change.

Our study, in fact, calls for a reversal of the perspective usually adopted in the various surveys, which considers the social consequences of technical change, that is to say the changes in behaviour imposed on the workers by the change (R. S. Lynd and H. M. Lynd, 1937; G. Friedmann, 1948 and 1952; F. R. Allen, H. Hart, D. C. Miller, W. F. Ogburn, 1957; G. Balandier, et al., 1959). Our purpose is, on the contrary, to define the behaviour tending towards change as a function of the social context. This reversal of outlook is justified by the fact that technical progress more and more constitutes not a historical change or incident but the very fabric of history.

Chapter I

SOCIAL ENVIRONMENT

Social environment constitutes the first element in the overall situation of the worker. It will be critical in determining his response to any technical change. His behaviour is conditioned by the fact that he is a member of a community and enjoys a specific social status.

It is clear that the worker's demeanour in the firm constitutes an integral part of his whole fund of attitudes and behaviour because the firm is not a system apart from the social system as a whole. The fact has been strongly emphasized that attitudes inside and outside the firm are complementary and that in examining specific behaviour there is a need for constant reference to the social situation as a whole (C. A. Arensberg, 1942 and 1957; W. F. Whyte, 1946, G. Friedmann, 1948; A. Touraine, 1957, A. Etzioni, 1960). Moreover reactions to a change can only be understood in reference to the worker's situation as a whole, and firstly to his position in a community.

A technical change constitutes a twofold threat to this position. It may introduce norms which are contrary to established norms and which alter the way of life. In this case, the resistance will express reluctance to become technically mobile. A change may also force the worker to leave his community and to work elsewhere. In this case, it will require him to become geographically mobile. In both cases, attachment to the established community may give rise to various types of negative behaviour. The actual content of the change, it is true, must also be taken into account. For the moment, however, we shall not consider either its meaning or its meaninglessness, but only the circumstances of its meaning.

We can therefore start from the following hypotheses:

a) the stronger the consciousness of community, the more difficult it is to accept technical change;

b) the more the working life is merged with life outside work in the community, the more difficult it is to accept technical change;

c) the more the new norms introduced by technical change are contrary to established norms, the more will it be felt as something which cannot be assimilated

1. BEHAVIOUR TENDING TOWARDS CHANGE AND COMMUNITY CONSCIOUSNESS

To what extent is community consciousness in opposition to the adoption of favourable position to change? How far does it diminish the probability of accepting technical mobility behaviour?

By " community consciousness " we mean being aware of belonging to a certain tangible entity and of observing certain norms of life. Everyone knows how important, as a general rule, the community can be in developing unwritten rules which even govern relations within the firm (W. H. Form and D. C. Miller, 1960; E. V. Schneider, 1957). Such rules are apparent chiefly during work conflicts. Thus, in Akrown's case (A. W. Jones, 1941) the community constituted a frame of reference common to the strikers and to management. Both sides accepted a compromise to the extent that, over and above their different points of view, they recognised the social norms and values predominant in the community. Similarly, in the case of a technical change, behaviour will be affected by the community situation for two reasons. On the one hand, the stronger the community consciousness, the more it is possible for the community as a whole to feel that it is involved. On the other hand, community consciousness can make the emergence of new work norms appear more formidable. To demonstrate this, we shall rely chiefly on studies of an undiversified community having few industries.

First, in the case where community consciousness is strong, technical change can arouse behaviour approximating to collective refusal in which non-workers reinforce the workers' resistance. The possibility of closing some of the mines in south-central France was opposed because it was felt to be a threat to the collectivity as a whole. " Anything which damaged the unity of the locality was regarded as a tragedy " (A. Girard, and P. Cornuau, 1957). The tradesmen, local representatives and parish priests reacted as vigorously as the miners themselves (J. M. Albertini, 1954). In this case, it is true, the technical change took the form of closing unprofitable mines and necessitated transfers. The overall negative behaviour was supported by a certain climate in the community. This renders difficult any favourable behaviour towards change by creating an emotional attitude of opposition which can be difficult to overcome, even after a rational explanation of the causes of the change.

To adopt a behaviour tending towards change, the worker must be able to evaluate the consequences of the change rationally. Where there is a collective reaction, it is difficult for him to do this. The word " deportation ", used to describe a possible transfer, shows the intensity of the emotional community reaction (A. Girard, and P. Meuthey, 1956).

A similar case is that of Elwood City (C. R. Walker, 1950) where two-thirds of the wage-earners worked in the same factory. The announcement of its imminent closure threatened the whole community, not only the trade union and the workers but also the shopkeepers, the professional men and the Chamber of Commerce, who " were stupefied ". " We all had the same feeling ". The resulting overall negative attitude was nothing other than the emotional reflection of community consciousness, or at the very least was magnified by it.

The importance of community attitudes is shown not only when factories are closed but also when a change takes the form of the modernisation or reconversion of a factory. Since it necessitates the modification of occupational roles it challenges the social status of the individual, for occupational status and social status are closely interdependent. The studies by W. L. Warner, and J. O. Low (1947) and by R. S. Lynd, and H. M. Lynd (1929) have amply shown the importance of the former in social stratification. Under these circumstances, attitudes will depend on the alterations that technical change brings to social statuses. In Yankee City, for example, the worker was recognised socially in the past according to his skill and seniority. The modernisation of the shoe factories shattered this hierarchy. The elimination of the old skills reduced the overall prestige of the workers. In such a situation, attitudes towards change are related largely to the established community attitudes. Community consciousness adds a generalised emotional support to the negative behaviour within the firm. In the case of non-diversified communities, attitudes often express community consciousness just as much as the worker's consciousness, as shown for instance by A. Pizzorno (1960). The individual sees the consequences of change, not so much at the level of the firm as at the level of his social existence as a whole, his family life and his community life. The preponderance of one element in his situation—social environment—would thus limit expectations to a continuation of the existing situation, and make it impossible to create a new attitude to change. This difficulty seems to be derived from the merger of working life with community life, that is to say with the total way of life.

2. BEHAVIOUR TENDING TOWARDS CHANGE AND THE MERGING OF WORKING LIFE WITH COMMUNITY LIFE

The more the working life is merged with community life, the more difficult it is to secure a change in attitude. On the one hand, such merging often indicates that the man's trade has not been freely " chosen " in the first place, for there are in fact only one or two industries in the community. This absence of alternatives for entry into the economy is likely to be expressed later as a resistance to mobility. It leads, also, to a greater sensitivity to the contrast between traditional and well-established norms and modern norms.

Indeed, in a non diversified community a man's trade is not really the result of a free choice. He does not decide to become a miner: the trade is passed down from father to son (A. Girard, and P. Cornuau, 1957). In the same way in the Upper Aude Valley in France (S. Moscovici, 1961) a man does not decide to become a hat-maker. The hat-making trade is imposed on him just as the situation in the community is imposed. The whole life of the community, moreover, is ordered in relation to this fact. In the first place, therefore, there is no search for a trade according to personal expectations. The man does not enter it with the feeling of an open future but because it is something from which there is no escape. This does not mean, however, that the young worker has a feeling of compulsion but rather the contrary, all his social prestige is attached to his occupational role. It is the prestige of the worker who has spent a long time in learning his trade from an older worker. This implies, however, that a change in attitude is unlikely, because it could arise only if the individual conceded that his expectations could not be limited to the overall situation in which he is living. The same reasoning could equally well apply to more diversified communities. Whenever a man's trade is not a matter of his choice, behaviour tending towards change can scarcely be expected: it would in fact require a change in behaviour[1].

Similarly, the contrast between the new and the old norms will be sharper in the framework of a community which is closely linked with its industry. Let us take again the example of Yankee City. At all levels, from the family to the various associations, social existence is primarily conditioned by working life. The rhythm of life is the rhythm of the factory, and the hierarchy of social prestige is that of occupational functions. Modernisation, however, appears as a threat to these norms. Family life is upset by the new working schedules.

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[1] G. Myers and G. P. Schultz (1951) note, moreover, that the worker tends to look for work later in the same way as he did the first time.

Rationalisation creates a social distance between the managers of the firm and the workers, which threatens to shatter the unity of the community consciousness. The worker can thus no longer talk to the employer. Moreover, as W. L. Warner and J. O. Low (1947) show, the workers see their status diminishing within the community.

A similar description of the consequences of reconversion is given by S. Moscovici in respect of the hat-making industry in the Upper Aude Valley. Conversion means in the first place the separation of the working life from the community life. The norms of both, which were formerly identical, become conflicting. The firm has become simply a production unit and can no longer be regarded as one of the elements of community life. It has become a system with a specific function and with a separate existence, and it imposes itself on the community on those terms. Here, too, rationalisation causes an increase in social distance in the converted factory. There is no longer any question of the worker being able to go straight to the employer: formerly he could do this even outside the firm. The time when an employer married a girl of the working class is remembered with nostalgia. Now the new social distance, even more than the new working methods and the new practice of shift working, has shattered the traditional norms by changing the way in which the individual fits into the social environment.

Here too, however, it is difficult for a behaviour tending towards change to develop, even if the contrast between the old and the new norms creates unrest among individuals. This can be seen from the fact that the older hat-makers oppose conversion even though they are aware of the slump in the hat-making industry and realise the need for conversion. To them, change is a fact; it has in no way a value connotation. They evaluate it through the traditional criteria of a skilled trade, criteria which are as much social as occupational. The difficulty in developing a favourable attitude towards technical mobility is that the change is experienced as a breakdown of community consciousness. As a matter of fact, the majority of the workers in the new plastics factory, which has been set up among the hat factories, are workers of rural origin who have never worked under traditional norms, and to them the acceptance of the modern work norms represents a step upwards on the occupational and social ladder.

The shattering of the old norms does not encourage workers to accept either technical or geographical mobility. The separation between working life and social existence does not result in greater freedom but in a tendency for the individual to withdraw into himself. As the importance of the community diminishes, the importance of the family increases (S. Moscovici, 1961). The desire to have one's own isolated house may symbolise this withdrawal (A. Pizzorno, 1960). In other words, the worker's expectations are so much absorbed in the social situation that they cannot be transferred to a new project, even though this social situation now no longer exists.

On the other hand, acceptance of change would imply that working life is separate from community life and therefore that the individual could and should choose his employment freely. In this case, there is no contradiction between the former norms and the new norms because the norms of work and those norms of community life are in any event more or less dissociated. Even in the case of a non-diversified community, however, it is not certain that the contradiction between the norms is really a fact. It may only have been felt to be a fact because the individual found it impossible to adopt a behaviour tending towards change.

3. CHANGE AS A FACT

Most authors, in their descriptions of such communities, represent change as a fact, or in other words as an external event which can have no meaning for the members of the community. It is not a response to expectations and does not stimulate coherent acceptance behaviour. In this case, the refusal which it meets is only an expression of its incompatibility with the traditional behaviour pattern.

Such a description of the behaviour is supported by the explanations furnished spontaneously by individuals, which seem to prove that adjustment to the new norms is impossible. The symbolism which they develop is a proof of this. Rural people often manifest negative attitudes towards technical innovations because these represent an invasion of the community by the outside world, of those " in the group " by those " outside the group " (H. Mendras, 1958). Similarly, in a small town like Nouville, anything which comes from outside, and this often means change, is suspect insofar as the consciousness of " we " is founded on opposition to " they " (L. Bernot, and R. Blancard, 1953). Change is therefore perceived as a fact imported from the outside, which cannot be integrated into the overall situation of the community. This is the origin of the spatial symbolism which permeates the words of the inhabitants of Elwood City and Yankee City. The new employers are foreigners, financiers who do not know the trade. " Little men and aliens run things now " (W. L. Warner, and J. O. Low, 1947). While this symbolism enables us to discover the power of community consciousness, it also brings out the difficulty of adopting new behaviour patterns.

Time symbols, moreover, are used to extend the spatial symbols. Corresponding to the " nearby " and " far away ", and to the " here " and " elsewhere ", there are the " before " and " after ". " Once, the managers of men were gods " (ibid). " Once, one really had a trade " (C. R. Walker, 1950). After modernisation, the situation was completely changed. The former highly valued situation is contrasted with the present situation. But the very idealisation of the past shows how much the former situation tends to be retained as a reference, if only to justify the impossibility of changing the behaviour pattern.

One could also stress the importance of such hackneyed phrases as, " It's progress, you can't do anything about it ", used for example by the miners (A. Girard, and L. Meuthey, 1956). Progress represents a symbolic situation which never connects with the real situation, or at least with the situation which the workers feel to be real.

How should these various symbols be interpreted? Are these contradictions real or do they only express vindications on the part of individuals who feel themselves threatened? Are they the reason for negative attitudes, or are they only their rationalisation? In the first hypothesis, we could resort to explanations in terms of " cultural lag ", such as might be applied to the developing countries (W. F. Ogburn, 1950; L. Nelson, C. E. Ramsey, and C. Verner, 1960). The gap between the norms makes it understandable that change cannot be assimilated, that at best it might be accepted as a last resort (in some cases it offers new perspectives of employment) but not as making a new behaviour pattern possible. In the Upper Aude Valley, the machine could thus be accepted as a solution to the slump, but as a symbol it would be rejected.

Is this hypothesis adequate, however? Can it really be said that change is refused to the extent that it is in contradiction to the traditional norm? The hypothesis may be rejected for two reasons. On the one hand, it is not usually true that a change is a sudden break with tradition. Before the change is felt as an alteration, a certain climate is created. The former general situation is gradually transformed before being radically challenged. The slump was perceptible in the mines and the Upper Aude Valley before it actually set in. There was a feeling of insecurity which preceded the feeling of a break. It was one of the feelings expressed in the strikes in Belgium in December 1960 and in January 1961, (M. Chaumont, 1962). The traditional behaviour was threatened even before the change became a fact. Even in the example, given by C. R. Walker, of Elwood City, where there was nothing to foreshadow the sudden decision to close the factory (this decision in fact was subsequently postponed) the workers, and especially the older men, were aware that behaviour was changing and that they were no longer working under the same conditions as before. In other words, change is a reality that is experienced, even within the traditional behaviour patterns, before it becomes an inescapable reality. Moreover, even in non-diversified communities, certain individuals are capable of adopting changes in behaviour, as we shall see. Thus, in certain cases, the traditional situation can be submerged before the rush of new expectations.

We can only say, therefore, that a change in behaviour has a smaller chance of occurring where community consciousness is stronger, and that in all cases change leads to a certain disorganisation of established social and community patterns (J. S. Coleman, 1961). As for the contrast between the norms, this may be only an expression of the difficulty in changing behaviour in cases where the adoption of behaviour tending towards change implies a break with traditional behaviour.

4. CHANGE AND NEGATIVE OR FAVOURABLE ATTITUDES

The perception of change as a fact is the rationalisation for opposition rather than the reason for it. This is to say that it primarily expresses a refusal behaviour. The symbolic contradictions that we have noted are not the cause of resistance to change; they are the direct expression of it, the past being idealised because the present is disappointing. Change is perceived at the level of the situation because it is impossible to experience it at the level of behaviour. Community consciousness is strengthened because any individual favourable behaviour appears impossible. In short, change is institutionalised; it is perceived only at the community level because the individual cannot give it a meaning for himself. The reason why change engenders these different forms of resistance and a vain nostalgia for the past situation is that it does not open a new future to the individual. It is imposed upon him without any consideration for his occupational continuity. The transfer of the miners is a fact because it breaks up their traditional behaviour, but it does not provide them with any new prospect of social or occupational advancement. Attachment to the traditional norms is simply an expression of this meaninglessness, that is to say of this distance in relation to the expectations. A favourable attitude towards technical mobility and geographical mobility necessitates that the change should appear to provide an improvement in working and living conditions.

These considerations can be verified by the example in the Upper Aude Valley. Close to the new Delrieu plastics factory, an existing hat factory attempted a partial conversion by opening in turn a plastics workshop. Now, although the workers in the Delrieu factory are satisfied with their change to the extent even of being unaware of its existence, the workers in the second factory express strong criticisms on the grounds that the partial conversion does not in fact offer them any new prospects. It has changed the situation without stimulating new expectations.

To bring about a favourable attitude to change, both the situation and the expectations must be altered. In the new Delrieu factory, the machine has been accepted because it symbolises a modern way of life. On the other hand, when expectations remain the same in a changed situation, as in the case of Yankee City, opposition predominates over acceptance.

It is therefore impossible to lay down a pattern of attitudes which would apply to all cases of change, for it is necessary to take into account simultaneously the nature of the social environment and the meaning of the change. According to the very nature of communities, a change may or may not have a meaning for the worker. Let us take the example of the miners in south-central France (G. Barbichon, and S. Moscovici, 1962). Their attitudes vary according to the kind of town or village in which they live. If they live in a village some distance away from the pits, they are generally in favour of modernisation, for neither their situation nor their expectations are in fact changed and they continue to lead the life of a miner-countryman. Similarly, miners living in large urban areas are not against it; their participation in a modern way of life has also transformed their expectations. On the other hand, it is in the intermediate areas of a rural and mining nature, where the miners are no longer countrymen but have not yet become townsmen, that difficulties arise. Their situation is changed but it has not been possible for their expectations to change also.

In the case of a diversified community, in a town for example, change will be more easily accepted. The unity between working life and social life no longer exists there, and the situation, that is to say the social environment, is itself subject to constant change. As E. V. Schneider remarks, " industrialisation can only operate in the framework of a community where roles are well defined and social relations are impersonal ". What is more, technical mobility here goes together with occupational mobility. They both express a fundamental favourable attitude towards mobility. In the towns, indeed, workers can change their employment more easily. G. L. Palmer (1956) notes in her survey of mobility in six town sin the United States that 70 per cent of the workers had changed jobs and also skills at least once during the previous ten years. One third of them had moved their place of residence. Thus, there appears to be an overall favourable attitude of mobility where change constitutes to some extent an actual reality of behaviour.

5. CONCLUSION

Where community consciousness makes a change in behaviour less likely to occur, this is because it produces expectations which are limited to the existing social situation. Acceptance of change implies the creation of new expectations. Moreover, the change should still have a specific meaning and should not stand merely for the breaking up of the existing social situation. But this meaning refers above all to the satisfaction of expectations at the economic level. The social environment in effect is only a part of the whole situation as it has been defined.

Chapter II

ECONOMIC ENVIRONMENT

The attitudes of the individual depend not only on the social environment, but on the economic environment also. By this term we mean not merely the labour market but in a wider sense the economic context within which the decision to modernise takes effect. As A. Siegel (1957) has stressed, this context is just as important as the social environment. Behaviour obviously differs according to whether the period is one of full employment or under-employment, of expansion or recession. It depends therefore on how the workers have perceived this environment. But this perception itself refers to two complementary factors. On the one side is the economic environment and on the other side are the expectations of the individual which, as we shall see, are related to his employment at the moment. These two factors enable the individual's behaviour to be defined. *A third factor, however, must also be taken into account. It is* the content of the change itself and therefore its meaning.

We can thus formulate the following hypotheses:

a) technical change is the more difficult to accept the more the worker's region or industry is threatened;

b) technical change is the more difficult to accept the less the worker's employment is assured.

The problem thus defined is fundamental. Modernisation leads to the decline of certain industries and certain regions, the case of certain Belgian and French coal fields is well known. Similarly, the decline of the textile industry in the United Kingdom and above all in the United States has created numerous " depressed areas ". Finally, the progress of automation and the movements of manpower which it may necessitate (H. B. Jacobson, and J. S. Roucek, 1959) increase the need for mobile manpower.

One further observation must be made, however. We shall consider simultaneously both attitudes to technical mobility and occupational and geographical mobility. We shall do this for three reasons. On the one hand, the problems of both technical and geographical mobility often arise concurrently from the objective standpoint and from the point of view of the workers. From the objective standpoint, as we have said, modernisation brings new definitions of jobs and of organisation and movements of manpower. From the workers' point of view it is viewed in terms of a traditional system of references in which modernisation always creates a fear of unemployment and transfer (H. B. Jacobson, and J. S. Roucek, 1959). A favourable attitude to mobility consists therefore in the simultaneous acceptance of technical mobility and of the possibility of occupational mobility. Moreover, since we are studying the origin of attitudes through both social and economic environment, it is clear that attitudes towards geographical mobility are especially concerned and make it possible to throw light on attitudes towards technical mobility. Finally, whether mobility is of one type or another, the problems posed in relation to expectations are similar (cf. Chapter IV).

1. PERCEPTION OF THE ECONOMIC ENVIRONMENT AND THE BEHAVIOUR TENDING TOWARDS CHANGE

We may say that perception of the economic environment is pessimistic when the worker has the feeling that his employment is threatened as a result of the decline of his industry or region. The stronger this threat, the more his expectations will be focussed on continuing the existing situation and the more he will be in a state of dependence in regard to his industry. He will think in terms of maintaining the status quo and not in terms of change, and he will be incapable of adopting a predisposition towards mobility.

Let us take again the example of the miners in south-central France. They are aware of the threat hanging over the future of the mines. Signs of this are numerous, ranging from the cessation of hiring young men to rumours of partial unemployment and transfer. But the more these signs accumulate, the more the miners feel themselves bound up with the future of the mines. This is shown by the fact that they express their concern for the fate of the area before expressing their concern for themselves. Far from interpreting the development in relation to their own careers, they regard it in the first place objectively at the level of the situation. They seek reasons for hope not in a possible occupational change but in the working of new seams. " The prospects for the future are considered essentially in relation to the mine. It is known that signs for confidence are being sought in the existence of workable seams " (G. Barbichon, and S. Moscovici, 1962).

This state of dependence is also characterised by the lack of information concerning the future, which prolongs the illusion that no change is taking place. People act as if the situation were still unchanged, not because they are unaware that it is different but because by so doing they can continue the same behaviour. They begin to consider more and more that partial unemployment is normal, or they ignore it completely, so as not to be obliged to respond to it by a behaviour tending towards mobility which seems impossible.

It is easy to understand the degree to which such dependence can prevent the adoption of any change in behaviour. It is accompanied by a shrinking of the personal horizon to the point where it is no longer possible for the person to take up another occupation. As has often been noted, the insecurity itself maintains the dependence (C. R. Walker, 1950, S. Moscovici and F. Lantier, 1957). It makes it impossible for a person to determine his own future.

Under these circumstances, whether it is a question of technical mobility or occupational mobility, the behaviour is the same. If an individual is optimistic about the future, he is favourably disposed towards modernisation. On the other hand, he is opposed to it where the future appears threatening and where transfers seem likely to follow the closing of the pits or the reduction of manpower. The attitude towards technical mobility here depends on the attitude towards geographical mobility.

A second example can be provided by the industry in the Upper Aude Valley. There, too, partial unemployment is prevalent, barely disguised in the form of seasonal work and regarded as the normal situation. There, too, the imminence of a slump increases dependence on the firm. It is not so much that mobility is refused, but there is no possibility of it. Mobility implies being able to see beyond the present situation. In these areas, expectations tend to consolidate the situation. People live from day to day. " They were psychologically attached to the firm and the district; they did their best to do a fair day's work without trying to find a solution " (S. Moscovici, 1961).

By preventing the individual from conceiving of a personal future, economic depression in an area or an industry thus tends to harden unadjusted attitudes and to prevent the adoption of any favourable attitudes to mobility. This is true, to the extent that the individual sees his own employment threatened.

2. EMPLOYMENT STABILITY AND BEHAVIOUR TENDING TOWARDS CHANGE

The individual seems to be in a dependent relationship with regard to the area only when insecurity of employment prevents him from distinguishing his own future from that of the area.

On the other hand, when he is in stable employment, he can escape from this dependence and develop expectations which transcend the existing situation. In other words, confidence in the present carries with it optimism in regard to the future and therefore potential mobility. There are thus two contrary attitudes: that of the worker in a modern factory who is sure of his employment, and that of the unemployed worker.

The first is not only more favourably disposed towards modernisation and shows great technical mobility, but he is also more mobile geographically than the worker whose employment is threatened. The basis of this potential geographical and occupational mobility is, paradoxically, the very stability of his employment which enables him to look ahead. Such is the case of the worker in the modern factory established in the Upper Aude Valley. Stability of employment is accompanied by a twofold availability, both with regard to modernisation and to moving.

The unemployed worker, on the other hand, is not so mobile (M. Komarovsky, 1940). He is distinguished by a passive attitude, manifesting his inability to go beyond the limits of his own area. Thus, when a textile firm closed, the majority of the workers who had waited until they were discharged from the firm did not even try to find a job (C. A. Myers and J. P. Schultz, 1951). At any rate, they rarely looked outside their community and occupation. Such passive behaviour is also found in depressed areas in the United States where unemployed workers always seem to return to settle down in the area in which they have no work (G. Barbichon, 1957). The worker is thus the less mobile the less his employment is assured.

Here is an important paradox with numerous consequences. The workers in stable employment, indeed, are potentially the most mobile. But they are also the persons who are most strongly urged to remain with their firm. They are often also the youngest, that is to say those whom the firm is most anxious to retain. On the other hand, workers who are strongly encouraged to leave are usually the least mobile. A favourable attitude to geographical mobility presupposes, in fact, certain expectations which these workers do not have. Such expectations, moreover, are precisely those which enable workers to adjust themselves to modern techniques and modern working life. Just as the worker is capable of a favourable attitude to change when he has confidence in the future of his industry or area, so he is capable of favourable attitudes when he is sure of his employment. But it is in the reverse situation that he is required to be mobile.

3. ECONOMIC ENVIRONMENT AND DIFFERENT TYPES OF MOBILITY

Following several authors, we may be tempted to distinguish two types of behaviour within the same economic environment, one corresponding to " spontaneous mobility " and the other to " passive mobility " (A. Girard, and L. Meuthey, 1956). It will be said that there is spontaneous mobility when the worker acts in terms of his personal expectations, and endeavours to solve for himself the difficulties which his mobility project may encounter. There will be said to be passive mobility when the worker acts under the pressure of a given situation and expects the community to solve his difficulties. These two types of conduct can in any case enable types of expectations to be identified. Thus, among the miners, according to S. Moscovici and F. Lantier (1957), some envisage a personal solution and others expect an institutional solution when they are faced with the possibility of the restructuring of the mine. In a similar context, different behaviour can thus be manifested. But further analyses would be necessary to determine the origins of these different forms of expectations.

Generally speaking, in the context of a slump, attitudes are determined less by individual expectations than by the objective need to keep or find employment of any kind. This is shown clearly in the study by C. A. Myers and G. P. Schultz (1951) as well as in that by P. Adams and R. L. Aronson (1957). At first sight, it would indeed appear that both types of spontaneous behaviour could be found here: behaviour tending towards change and mobility, which would be the one shown by those workers who do not wait for the imminent closing of the factory before looking for another employment; and resistance or a passive attitude, where the workers wait to be discharged on the final closing of the factory before starting to look for employment. The difference between these two types of behaviour, in fact, is often less a difference of nature than of opportunity. The workers in the first category are in general those who know of possible employment. But they do not choose this employment any more than do the workers in the second category. As a rule, both categories of workers accept the first employment that is offered. During recessions, the most important criterion in the matter of employment is no longer the wage level nor the arduousness of the work; it is the very existence of a job. Moreover, if we were tempted to look upon the former category as belonging to one favourable to mobility, we can see how fine this distinction is. In their new employment, as P. Adams and R. L. Aronson show, they do not display in practice a more noticeably favourable attitude toward mobility than the latter, even if in theory they show greater availability. The very experience of change, or in any case of enforced change, far from strengthening a favourable attitude towards change behaviour in either, increases the importance of the criterion of employment stability. This criterion, under-estimated during a period of stability which allows for favourable attitudes to change, resumes its full importance in a period of instability as stated by C. A. Myers and G. P. Schultz.

Any analysis of behaviour towards change must therefore take into account the economic context. When L. G. Reynolds and J. Shister (1949) say that the fundamental criterion in a decision for change is the physical arduousness of the work, this result only has a significance, as they themselves make clear, in a specific economic context. This is true both of actual technical mobility, or of geographical or occupational mobility. The meaning of the change is determined here by the basic expectation of being in employment. Its meaninglessness is never so plainly felt as when the change breaks the continuity of the occupational career.

4. CONCLUSION

If a worker has to adopt a behaviour tending towards change, he must be able to look ahead, that is, to see his future clearly. The condition required for this is stable employment or the prosperity of his industry and his area. Since his attitude in the face of technical modernisation passes through the traditional reference of possible unemployment and hence of enforced geographical or occupational mobility, acceptance of change occurs when he is actually sure of his future. The introduction of automation makes this security more necessary than ever. Without it we cannot hope for a favourable attitude to change. Participation in values which are themselves changing can, it is true, create new expectations which are at the source of such behaviour.

Chapter III

CULTURAL ENVIRONMENT

Cultural environment, finally, is another element in the overall situation. It occurs in the form of norms of values. But while social norms properly speaking apply to all individuals, cultural norms differ according to the socio-economic level of the individual. Cultural norms in the form of consumption norms, moreover, define a situation which is changing. The change is in fact felt in the everyday life of the individual as a consumer (L. Bernot, 1960). New expectations are thus created, encouraging the individual to free himself from the framework of the traditional social norms. In the same way, these expectations enable him to accept new work norms more easily. By arousing a favourable attitude to change in the way of living and consumption, modern cultural norms prepare the individual for a favourable attitude in his working life.

We can therefore put foreword two hypotheses:

a) technical change will be the more easily accepted the more the individual already participates in modern consumption norms;

b) technical change will be the more easily accepted the higher the socio-economic level of the individual: (it is assumed here that there is a positive correlation between socio-economic level and participation in modern consumption norms).

1. BEHAVIOUR TENDING TOWARDS CHANGE AND MODERN CONSUMPTION NORMS

When the worker is in a situation defined in terms of modern consumption norms, he can accept a change more willingly. Modern norms confer a value on a change by stimulating expectations which are directly linked with them. In this way, the urban worker can adopt a favourable attitude more easily than the worker in a small rural village because he already participates in a changing structure. It is true, however, that the worker in a village can himself be mobile. Having entered a sphere of modern consumption which in fact imitates the urban pattern, he can look upon his migration to a large town and a modern industry in terms of an upward social mobility. There is no doubt that this element plays a large part in the behaviour of workers of rural origin. Moving to the town is, for them, the beginning of upward mobility. Being incompletely assimilated to the other workers, moreover, they sometimes accept technical change more willingly (A. Touraine, and O. Ragazzi, 1961). Modern consumption norms thus create expectations which render change the very texture of the modern way of life and wrench the individual away from the traditional social norms. Such acceptance of urban consumption norms is one of the reasons why the workers in the new factory in the Upper Aude

Valley are more mobile than those in the other factories: the higher level of their wages gives them access to these norms.

The change in needs is marked by a new importance given to the household budget, for the new needs make it necessary to plan expenditure. The more deeply the worker is committed to modern consumption norms, the greater his concern over his budget. This can be verified in the case of the miners in urban areas in south-central France. The new importance given to their budgets is in direct relation to the new concern with the future perceived in terms of change, whether the future considered is their own or that of their children. It is also expressed in a transformation of family life. In the traditional context, the wife managed the family budget on her own account (L. Bernot, and R. Blancart, 1953) but in a modern context the husband and wife organise their expenditure together. This change extends beyond a simple alteration in family values. It symbolises adoption of a general favourable attitude to change, which also prepares for technical or geographical mobility behaviour.

2. BEHAVIOUR TENDING TOWARDS CHANGE AND SOCIO-ECONOMIC LEVELS

The attitude towards change depends, of course, on one's personal relation to these consumption norms and hence on the socio-economic level (W. Ackermann, and S. Moscovici, 1959). Needs are linked with adequate financial resources which, like stable employment, enable the individual to have an open economic horizon. They therefore make a favourable attitude towards mobility easier. This is another reason why the worker in a modern factory can be more mobile; having both wage security and job security, he can be more responsive either to a higher wage offered by another firm or to a higher wage which he can obtain on his own. In both cases, the reference to modern consumption norms makes a favourable attitude towards mobility possible. On the other hand, a low socio-economic level causes both a reduction of needs to primary requirements and commitment to the traditional norms of life. This is so in the case of the miners in Aveyron. Their socio-economic level is particularly low, whereas their satisfaction level is particularly high. Although this situation enables them to accept the modernisation of the mine passively, it leads to very strong resistance when transfer is considered. Integration into the modern—and changing sphere of consumption may therefore stimulate expectations which appear to favour mobility. The absence of such expectations leads on the other hand to opposition towards certain forms of change.

3. CONCLUSION

Although social environment may give rise to some emotional opposition to change, the modern cultural environment can on the other hand favour mobility. Although in the first context the change may appear suddenly as a harsh fact, in the second it represents the very structure of the development of expectation. A favourable attitude toward change is more likely to occur in a situation of changing norms such as is the case in a modern cultural environment, than in another situation

So far we have only dealt with expectations to the extent that they reflect certain situations. These expectations in fact are more complex. They do indeed relate to a situation but they also depend on individual variables. These will now be considered.

Chapter IV

INDIVIDUAL EXPECTATIONS

The expectations of individuals are an expression on the one hand of the situations in which they live, and on the other hand of a certain number of variables such as age, family situation, etc. In defining attitudes to mobility in terms of these expectations, we do not intend to fall back on an explanation on the basis of " mentality ". The presence or absence of a favourable attitude to mobility has often been attributed to the " mentality " of the older workers. In fact, we must remember that these expectations refer to a situation. Research on attitudes towards change must take into account simultaneously the situations defining the worker's horizon and the nature of the change.

We shall here consider this attitude towards change as an overall attitude. Technical, geographical and occupational mobility are expressions of it. Expectations, in fact, through their twofold reference to individual and contextual variables, define an overall attitude which is reflected in one or another of these expressions.

In the definition of these individual variables, however, we run into many difficulties. Age and family status on the one hand, and occupational status on the other, are as a general rule closely related. Similarly, it is rare that men and women are engaged in identical jobs and it is difficult to discriminate between what is conveyed by differences of employment and by differences of sex. The same can be said of ethnic or religious attributes: in many cases these attributes may explain access to certain jobs and not to others. In these circumstances, how can attitudes resulting from employment be isolated from those which refer to ethnic or religious attributes? Once these difficulties have been located, however, it is possible to make an approximate evaluation of the individual variables. We shall only take account of such variables as skill and seniority, therefore, when they cut across those fundamental variables which express the expectations and the situation of the worker in the most general way.

1. AGE AND CHANGE BEHAVIOUR

It is well known that on the whole the older worker is less mobile than the young worker. Although the phenomenon has been studied mainly at the level of geographical and occupational mobility, it can be interpreted on the basis of a system of expectations which also influence technical mobility. Various studies do in fact show that occupational mobility is inversely related to workers' age. Thus, according to G. L. Palmer (1954) the male workers between 25 and 34 years of age in the six towns studied had on the average 3.4 jobs during ten years. This average decreases towards the higher age brackets and falls to 1.7 at the age of 65. Mobility not only decreases with age but its scope diminishes. If an older worker changes his employment, he will be less willing than a young man to change his industry or his type of job. Still according to G. L. Palmer, more than 50 per cent of employment changes among workers under the age of 55 are accompanied by a change of industry or type of job. Only 43 per cent of the changes are equally complex among workers between 55 and 64 years old, and for those of 65 years and over, the corresponding figure is 38 per cent. The relation with age is even clearer if geographical mobility alone is considered. According to a study by D. J. Bogue (1952) dealing with Ohio and Michigan, the number of workers aged under twenty-five who change their place of work is three times that of workers of 60 years and over.

What are the reasons for this relation between age and mobility? Do they make it possible to define specific expectations which are at the basis of attitudes to technical mobility?

In the first place there is an objective reason. Apart from the job interest, various advantages or privileges often keep the older worker in the firm. Seniority is often recognised and protected by the trade unions. This explains why the relation between job seniority and mobility is even clearer than that between age and mobility. According to L. G. Reynolds (1951) the desire to change employment decreases after three years seniority and becomes negligible after ten years.

Beyond this objective reason, we can notice above all a variation in expectations which may explain the change in behaviour. As E. Chinoy remarks (1955) aspirations decrease after the age of 35. They not only decrease but they are also modified.

The young worker, in effect, has specific aspirations. They may be a sign that he is less integrated in the working world and the system of adult values. They may show principally that he is less concerned with the long-term future, which allows him to have expectations different from those of the older worker. N. de Maupéou-Leplatre (1961) notes that wage and job interest take a predominant place in the short-term prospects of young workers. On the other hand, motivations such as promotion, and above all security of employment or openings, are weak or do not even exist. G. L. Palmer (1957) notes that the criterion of success in the trade is fundamental among young people under the age of 35. Generally speaking, it can be acknowledged with E. A. Friedmann and R. J. Havighurst (1954) that young people look for satisfaction primarily at the level of their wages or in the interest they have in their jobs, and much less or not at all in job security.

What are the implications of these expectations when it is a matter of defining possible differences in attitudes to change? They are clear both for occupational and technical mobility. At the level of occupational mobility, we can expect intense active mobility among young people, because the worker is trying to find an industry which meets his requirements both as regards wages and occupational interest. It is thus that the tentative behaviour analysed by L. G. Reynolds is explained. The young worker comes into the labour market through a long process of search (E. Ginzberg, S. W. Ginsburg, S. Axelrad and J. L. Herma, 1951) which may extend over six or ten years. This exploratory phase can, it is true, take on a more or less haphazard aspect. Thus, N. de Maupéou-Leplatre (1961) stresses the existence of two types of behaviour: although the first tends to develop according to concerted and rational choices, the second has an unsystematic and disjointed aspect which indicates a difficulty of integration in the working world, rather than a genuine search.

At the second level, that of technical mobility properly speaking, the specific expectations of young people also make a favourable attitude towards change more probable. This can be seen from the fact that the young people referred to by N. de Maupéou-Leplatre who are rational in their behaviour are precisely those who enter the most dynamic sectors. Their expectations and aspirations in regard to wages and interest in the trade thus find a possibility of satisfaction in technical change. Similarly, young people willingly accept work in modernised iron and steel works (J. Drofny, C. Durand, J. D. Reynaud, and A. Touraine, 1957). In effect, they are not restrained by the memory of occupational prestige in the old trade. On the contrary, they believe that all prestige lies with modern methods of manufacture. The same thing applies to young miners.

A favourable attitude towards change thus takes a high value in connection with certain expectations appropriate to young workers. The expectations of older workers are obviously different and are characterised by different behaviour. This does not mean that they have lower expectations; they are just other expectations. After the age of 35, workers look less for success in their employment than for security (G. L. Palmer, ibid.). Wage and interest criteria thus lose their predominance.

There may be various reasons for the transformation of expectations. It is not impossible that, in certain cases, the main reason for it lies in attachment to the trade. This can be so in industries where skill develops through seniority. How far, however, is attachment to the trade the authentic reason? Or how far does it merely express opposition or the impossibility of a change? (G. L. Palmer, 1962). More generally, indeed, the search for employment security manifests fear in the face of possible unemployment or of adjustment to new techniques. Such fear is usually well founded, for the older the worker, the more the threat of unemployment is to be feared (H. J. Ruttenberg, 1939, C. B. Kerr and E. F. Witte, 1950). Independently even of the threat of unemployment which it brings, modernisation implies retraining for the worker, which is more problematical the older he is. Ageing indeed has a more serious effect on the acquisition of new skills than on the maintenance of skills already acquired (J. R. Treanton, 1962). Ageing also makes retraining more difficult when the individual is only slightly or averagely gifted (S. Pacaud, 1963). Under these circumstances, even when his employment is not directly threatened, the older worker can only adopt a reserved attitude towards technical modernisation and towards the new fatigues which it may entail (R. K. Kleemeier, 1962).

Unlike young workers, then, older workers generally manifest poor technical or occupational mobility. Their expectations actually render them unfavourable towards it by making them inclined to maintain a situation rather than to seek to improve it. Although the young man may indeed have expectations which stimulate him to choose his employment in accordance with his wishes, the older worker tends, no doubt through necessity, rather to limit his expectations to the situation.

Furthermore, in cases where the labour market offers no possibility of employment, the young man is obliged to observe the same limitation (L. P. Adams, and R. P. Aronson, 1957). But this does not make the difference between the behaviour of old and young workers any less fundamental in a satisfactory economic context.

Age, therefore, by modifying expectations diminishes the possibility of a favourable attitude to change. The older worker is more averse to geographical, occupational or technical mobility than the young one. In many cases, however, these expectations only reflect a situation of fact. Aversion is then only the obverse of impossibility.

2. SEX AND BEHAVIOUR TENDING TOWARDS CHANGE

It is more difficult to define accurately the difference between men's expectations and women's expectations. It has also been observed that it is difficult to compare the mobility shown respectively by men and women because their jobs are not identical; moreover, women work over shorter periods than men (M. Guilbert and V. Isambert-Jamati, 1962). However, various studies in labour mobility agree in recognising that women tend to be less mobile than men (D. J. Bogue, 1952). G. L. Palmer shows that, in the six towns she studied, men's mobility is greater whatever the age considered. The difference is greatest between the ages of 35 and 44; in ten years men have three jobs on an average, women only 2.6. This difference does not, however, prevent men showing frequently greater stability in a given job, a finding which is confirmed in another study by G. L. Palmer (1941). These results are not contradictory. They only show how necessary it is that the frequent interruptions of a woman's occupational career should be taken into account. If, in the study of the six towns, the comparison is limited to mobility of men and women who have not left occupational life, it will be seen that there is no marked difference. A difference exists, however, when the actual content of this mobility behaviour is analysed. From the same study of mobility in the six American towns it seems that men are more mobile in regard to types of jobs. However, when women change industries or even towns, they take jobs of an identical level of skill more frequently than men.

These results may make it possible to define the specific expectations of men and women, and hence to define their specific attitudes to mobility in the case of technical change. Women, it seems, attach less importance to the wage criterion than men. Their satisfaction in regard to their work depends less on an " economic " type of appreciation and more on an appreciation which takes account of the arduousness of the work and of relations within the firm (G. L. Palmer, 1957). The economic criterion is only of secondary importance for women, at least in comparison with the place it takes for men, because women do not at the outset perceive their trade in the same light as men. They have to break off their occupational life and to take it up again later more often than men. Their expectations are therefore more complex than those of men and less determined by the work situation. It should also be noted that they are usually white-collar workers, a fact which may also stimulate other expectations (J. Schiffman, 1961).

These expectations being so defined, can we predict what a woman's specific attitude to technical mobility will be? In one sense, the fact that her expectations are less determined by the work situation may enable her to accept technical change more easily. The possibility of her technological unemployment may even be less serious than for a man, for women in any case are accustomed to interruptions in their occupational life. This is even truer if they are married and if their husbands work (J. Schiffman, 1961). Their acceptance of change depends, however, on the consequences of modernisation. Being engaged generally in unskilled employment, a woman reacts according to what this employment becomes. If modernisation brings the elimination of handling tasks, in which she is often employed, she cannot but accept because her job becomes both less arduous and of better standing. In other cases, however, modernisation is accompanied by greater differentiation among jobs. Unskilled jobs which continue to be unmechanised lose still more standing. This possible effect of modernisation was particularly pointed out by S. Nehnevajsa (1959) in a study on the consequences of automation. Such consequences may be manifested in the form of increased social distance within the firm to the extent that the heterogeneity of the jobs is increased with the introduction of automation. In this case, women, who often fill the very jobs which are going to remain outside modernisation, are in danger of experiencing this new social distance. In the analysis of the developments in the Upper Aude Valley, S. Moscovici (1961) notes: " Industrial reconversion has only served to deepen the line of cleavage between the sexes and to aggravate its consequences because most of the jobs created were intended for men...it is not surprising that women show a more reserved attitude towards industrial conversion which does not offer them any chance of improving their condition ".

Women's expectations are therefore determined less than those of men by the work situation. In this sense, a more spontaneous behaviour tending towards change may be expected. The change moreover should not involve a deterioration in the situation.

3. THE FAMILY SITUATION AND BEHAVIOUR TENDING TOWARDS CHANGE

As might be expected, most surveys of manpower mobility show that married individuals are less mobile than those who are unmarried, and that individuals with families are still less mobile. Thus, G. L. Palmer's study of mobility in six towns of the United States shows that, in Los Angeles, heads of families are less mobile whatever their age. On the average, they have had 2.7 employments over ten years while the single persons have had 2.9. It is true that the difference is also due to the difference in average age between the two categories. However, if only two samples in middle age are considered, the difference in behaviour between the two categories of individuals is largely confirmed. It is still more noticeable when geographical mobility alone is considered.

Here, too, the difference in behaviour goes back to a difference in expectations. The family situation gives rise to certain expectations. It is a stable system, or relatively stable in comparison with the work situation (T. Caplow, 1954). It tends to impose less variable expectations than those of single people. C. A. Myers and G. P. Schultz (1951) or S. Moscovici (1961) show that the unmarried are more willing than the others to leave the community to find work. T. Parsons (1941 and 1953) formulates the hypothesis that the worker is the more mobile the smaller his family. This hypothesis is not always confirmed, however, and still less where the worker lives in a more modern socio-economic context. A survey made in Buffalo shows that there is no inconsistency between a large family and occupational mobility (E. Litwak, February 1960). Even geographical mobility is not so much hindered by a family as is often said (E. Litwak, June 1960). Expectations developed by the work situation can in fact counterbalance expectations arising from the fact that a person has a family. The latter are not necessarily in opposition to the former. It can only be said that as a general rule the expectations of the head of a family are more limited than those of a single man and more complex in relation to the work situation.

When confronted with modernisation, therefore, the single man and the head of a family do not adopt exactly the same behaviour. The difference will always be most marked, it is true, in the case where family life is closely interrelated with the working world. This is often the case in a non-diversified community (H. S. Lahne, 1944). In other cases, behaviour follows two determinants. On the one hand, it is certain that the attitude of the head of a family depends partly on the appreciation of his work shown by the family. The family as a group, in fact, has specific expectations (W. G. Dyer, 1962). It is sensitive to wages and working hours and it is also sensitive to the job security and independence of the head of the family, or in other words his standing. In this sense the worker's opinion could be influenced by his family. There are so many elements (changes in working hours, the end of traditional skills, dependence in regard to the organisation) to which the head of a family may have to respond negatively because the status of the family may be changed by them. This was clear in the example of Yankee City. The loss of standing was felt even within the family circle. On the other hand, technical change also creates a greater separation of work life from family life. Manifestations of this, such as increased concern with the family budget, have been noted. The dissociation between the two spheres may even be complete (D. Alberle and K. Naegele, 1952). In this case, technical change leads at the same time to the dissociation of the two categories of expectation, that which refers to work and that which refers to the family. The family obstacle may then be less evident. The transition phase is therefore most delicate, for it is during this phase that the worker must, for example, become accustomed to night work and his family must organise their time-table accordingly. The behaviour he adopts depends finally then, on the meaning he gives to the change at the level of his work situation.

The family, therefore, constitutes an important element in the worker's expectations. This element is all the more important when the worker is in a work situation in transition. It becomes essential if the change is felt to be meaningless

4. DEGREE OF INTEGRATION IN THE COMMUNITY AND THE BEHAVIOUR TENDING TOWARDS CHANGE

When we analysed the total situation, we did not take account of the different ways and means by which individuals are related to it. We described the expectations aroused by the situation but we did not mention expectations which reveal specific forms of relation to them. Ethnic or religious ties, however, and length of time spent in the community, define certain expectations which in turn may cause specific behaviour, more particularly in regard to the work situation.

Ethnic group. Here we shall only consider the ethnic group, although a similar analyses could be made on the basis of religious groups. There are few studies, however, which help to assess the mobility of workers belonging to an ethnic minority. Nevertheless, it appears that in the United States coloured workers are more mobile than white workers. For example, according to D. J. Bogue (1952) two-fifths of the coloured workers changed their employment in the course of a year while only one-third of the white workers changed. These results have only a limited value, however. Coloured workers are in fact usually employed on unskilled work; they find themselves denied access to a number of industries. Their greater mobility can therefore be partially explained by these other two variables (H. S. Parnes, 1962).

However, on the basis of other research we can try to determine the specific expectations. On the one hand, coloured workers appear to pay more attention to job security than to any other value (G. L. Palmer, 1957). This behaviour may be connected with the kind of jobs they occupy. It seems established that the mobility of unskilled workers, and more particularly of manual workers, is well above the average; this is a forced mobility rather than a voluntary mobility and often corresponds to discharges (H. S. Parnes, 1962 and G. L. Palmer, and J. M. Kreps, 1961). On the other hand, and as a result of their ethnic situation, they have not accepted the success values (E. Chinoy, 1955) which may characterise the expectations of white workers. R. K. Merton (1957) also notes that coloured workers, belonging to lower social and occupational strata, do not accept the ideology of success. Although white workers generally adhere to this ideology and show moreover an optimism according to their occupational situation (H. H. Hyman, 1953) coloured workers do not. This is shown by the fact that they may be optimistic about the future of their occupation and yet pessimistic about their own future. This contrast is even sharper in the case of coloured workers having an intermediate occupational status. White workers, on the other hand, merge into one opinion their forecasts about the future of their occupation and about their own future. The coloured worker's situation therefore limits his expectations. This would doubtless be found in the case of numerous minorities who know, as do the coloured people of the South or of the North in the United States (J. Dollard, 1937; H. Steele, 1953) that their expectations are limited by their situation. Thus a similar analysis would make it possible to account for the expectations and attitudes of the French Canadians as reported by E. C. Hughes (1943).

Under these circumstances, what would be the behaviour of such minorities in the face of technical change? At first sight, it seems that these circumstances are unfavourable, not because change frustrates their expectation but because they can expect nothing from it. Technical change does not appear in a perspective of upward occupational mobility, for this in effect is prohibited. Furthermore, modernisation imposes working methods which may sometimes be scarcely compatible with the social situation of the coloured workers for example. A. Davies (1946) described the coloured worker's situation, which cannot be defined in terms of the economic criteria applicable to white workers. Thus, social conditions and poverty cause absenteeism. Now, acceptance of modernisation implies that it is part of some world of values and more particularly, one in which promotion is highly rated. The expectations and the objective situation of the coloured worker are very likely to prevent him from participating in technical progress except in inferior jobs. Sociologists are all the more attentive to this problem, because they have met it in the countries in process of industrialisation. It is true that in this case the explanation is rather different. It is characterised less by the impossibility of satisfying expectations, which although repressed through necessity are nonetheless there, than by the existence of radically different expectations. More particularly, it is well known how much attention has been given to the fact that, in numerous regions, real economic expectations did not exist (M. J. Herskovits, 1952; W. E. Moore, 1958; C. R. Walker, 1962).

In certain cases, however, these minorities prove to be favourable towards technical change. Although the progress of automation sometimes leads to increased social and occupational distances in other situations, as we have said, it may also contribute to the reduction of these distances. By eliminating menial tasks, it simultaneously raises the standing of the lower jobs. Thus, coloured workers may derive more satisfaction than white workers from the introduction of automation in the automobile industry. In effect, modernisation leads to a considerable alteration for them in the matter of status (W. A. Faunce, 1960). Such was the case in a tobacco factory in the south of the United States, where the threat of unemployment forced the white workers to accept unskilled employment, previously left to coloured workers, at the very time when the latter were beginning to get access to skilled jobs (C. S. Johnson, 1962).

Technical change can thus, in fact, bring about a revaluation of certain jobs and hence even add new value to the occupational role of workers belonging to an ethnic minority. In many cases, however, the latter will receive the change with indifference. Not participating in the other workers' expectations, they cannot in effect bring their own expectations to coincide with the new perspectives opened to them by change.

Migrants. Individuals who have been living in a given community for less than twelve years are generally regarded as migrants. This definition is given by G. L. Palmer (1954). The relation to the community is therefore different from that of the other inhabitants. Having already made one change and being less attached to the community, they can be expected to be more mobile and to show specific expectations.

It appears in fact that such migrants show a stronger disposition towards mobility than non-migrants. Thus, the difference in respect of mobility observed among workers in Chicago and workers in Los Angeles is explained by the greater number of migrants in the second town (G. L. Palmer 1954). As a general rule, migrants have had a greater number of employments than permanent inhabitants. Although the number of employments is not inversely proportional to the length of town residence, at least it falls off considerably in the case of individuals who have resided there for twelve years or more (A. J. Reiss, and E. M. Kitagawa, 1953). Migrants tend to change not only their firm more than the permanent inhabitants, but also their job, industry and even place of work It must also be taken into consideration that migrants may have characteristics in respect of age, family situation or skill which affect their migratory qualities. Nevertheless, all other things being equal, they are indeed more mobile than other individuals.

Migrants can therefore be expected to have specific expectations which account both for their mobility in the past and for their present disposition towards mobility. Such expectations may, however, be of two kinds. In a period of unemployment, migration can be prompted by no other expectation than that of finding employment. Even in that case, migrants can be more active than non-migrants and the initial mobility project is maintained in greater mobility afterwards (R. Freedman and A. H. Hawley, 1949). In a period of expansion, moreover, migrants may be activated essentially by a desire for upward social and occupational mobility. In this case, expectations also depend on their original background. It is this, in fact, which confers on the mobility plan its specific character. Thus, migrants of agricultural origin, as we have already seen, may fail to integrate completely into the worker circles where they arrive by reason of expectations which do not mix with the non-migrants' expectations. They endeavour to maintain the specific nature of their plan for social advancement by not adapting themselves to a situation, such as that of unskilled workers, which is partly contrary to their plan. Finally, they are more sensitive than other workers to wages as a criterion for satisfaction (A. Touraine, and O. Ragazzi, 1961). We can therefore see how migrants have specific expectations, both by reason of their original background and of their lesser degree of acceptance in the receiving community.

It may therefore be expected that migrants will accept technical change more readily than other individuals. On the one hand they are restrained to a less extent by obstacles such as the feeling of belonging to a community. On the other hand, more often than the others they consider the wage as the essential criterion of satisfaction. Unfortunately, there are so few concrete studies on this point that it is not possible to confirm these hypotheses. Therefore, it can only be said that the migrant, activated by a mobility plan, should according to all probability accept technical change more willingly because he can see in it an opportunity for social and occupational upward mobility.

5. LEVEL OF EDUCATION, HOUSE OWNERSHIP AND BEHAVIOUR TENDING TOWARDS CHANGE

Level of education and the fact of house ownership are also important variables which give rise to specific expectations. We shall only mention these two variables. The first one is in fact difficult to isolate from level of qualification. The second one is broadly related to community consciousness, for community consciousness and house ownership develop very similar feelings of belonging. Nevertheless, it will be useful to identify very briefly the influence of these two variables on behaviour.

The surveys stress the existence of a positive correlation between level of education and mobility. The higher the level of education, the stronger is this relationship. We shall only mention one survey cited by H. S. Parnes (1954). In a given sample, over a period of 17 years the individuals who had reached college level had an average of 3.3 employments; those who had gone no further than high school had only 2.3. This correlation is quite comprehensible. When the education of the individual goes beyond a certain level, he develops specific expectations and at the same time objective possibilities which stimulate him towards mobility. He can be more sensitive than other people to the attraction of a higher wage or of the intrinsic interest in a job. These two elements as a general rule constitute the two principles of voluntary mobility (G. L. Palmer, 1954). It is true, on the other hand, that when occupying higher positions in a firm a person may sometimes show great stability, especially in comparison with uneducated workers doing manual work (G. L. Palmer, 1962), but the analysis then returns to the study of expectations as a function of levels of skill, which is not our concern here. It is sufficient to say that in any case two types of qualification can be distinguished. On the one hand, there is the traditional qualification, obtained by apprenticeship in the firm and length of service. Individuals so qualified can be non-mobile, even occupationally, for their training is not in fact multivalent (C. A. Myers and G. P. Schultz, 1951). On the other hand, the second type of qualification resulting from level of education seems to stimulate a very high degree of mobility. It can thus be considered that the educated individual will also prove favourable to technical modernisation. Here, the results could be compared with those arrived at on the basis of hierarchical level (W. H. Scott, J. A. Banks, A. H. Halsey, and T. Lupton, 1956). A high degree of technical mobility behaviour corresponds to a high level in the hierarchy.

The fact of house ownership, must be considered as an obstacle to mobility and may give rise to certain attitudes of withdrawal. Such a phenomenon is not surprising when geographical mobility is considered, and according to a study by G. H. Heneman (1950), house ownership is the most important variable in this case. But, it also plays a part in the determination of the level of occupational mobility. His study shows that only a quarter of manpower mobility (occupational or geographical) can be attributed to individuals owning a house, who constitute one half of the labour force. This result is debatable, however. G. L. Palmer (1952) sees no correlation between this variable and occupational mobility. L. G. Reynolds also confines its influence to geographical mobility alone; he found, indeed, an appreciable difference in reactions between house owners and other individuals to a possible geographical move.

These findings are not surprising. House ownership defines certain expectations which are in opposition to the expectations which govern attitudes toward geographical mobility. In the first place, everything encourages the house owner to think in terms of residence and the community, rather than in economic terms properly speaking. It has been seen how much opposition was shown in Elwood City (C. R. Walker, 1950) to the idea of leaving the community. Four out of every five workers there own their own houses. This house ownership may partly account for the phenomenon, found in the depressed areas of the United States, that unemployed workers go back to their original place although they have no work there. House ownership may even impede occupational mobility, as H. G. Heneman says, and also possibly technical mobility. It encourages individuals to take up an attitude of withdrawal. In other words, their expectations may appear completely different from the expectations required for the acceptance of any technical change, reverting to a feeling of security rather than stimulating economic ambition. A. Pizzorno (1960) suggests moreover, as we have seen, that the house has a symbolic value: it carries on " the old system founded on land ". In these circumstances, house ownership can impede not only geographical but also technical mobility. But everything depends, it is true, on the socio-economic context in which this phenomenon is located and on the nature of the change. Our conclusion is in effect more plausible in an undifferentiated socio-economic context and in the case of a sudden change as was the case in Elwood City.

6. CONCLUSION

We have thus been able to define a certain number of expectations depending on individual variables. These expectations, however, as we have seen, are also defined in relation to the total situation which may lead to a variation of the initial expectations. The secondary expectations, resulting from the situation, enable the individual's reaction in the face of change to be interpreted.

It is according to the meaning or the meaninglessness of the change, and therefore according to whether it fulfils or frustrates the expectations, that positive or negative results can be expected.

It is this meaning or meaninglessness that we shall now briefly discuss.

Chapter V

MEANING OF THE CHANGE

To the extent to which meaning or meaninglessness refers to expectations, one can define the characteristics a change should possess to obtain acceptance. Yet people often struggle against workers' resistance to change without giving consideration to their expectations or without thinking of arranging the introduction of the change in such a way as to render its acceptance possible. We have seen that resistance, in the context of the socio-economic situation as a whole, is perfectly intelligible.

This resistance does not mean that final adjustment is impossible. It is an indication, however, of the difficulties in a specific situation. The problem is, therefore, to determine how expectations can be transformed, and how, more particularly, some behaviour tending towards change which is impossible at present can be made to appear possible or even desirable for the next generation. Starting from an analysis of change, we shall be able to see how, in spite of resistance, change can progressively cease to appear as a hard fact and can become an element of behaviour. We can thus put forward the following hypotheses:

a) technical change has more meaning when it does not lead to a break in the individual's occupational life;

b) technical change has more meaning when it is not imposed in an authoritarian manner, without participation by the worker;

c) technical change is becoming increasingly real and enters into workers' expectations: this is shown by the importance it assumes when workers consider the question of their children's future and the role of education.

1. Expectation and meaning of change

We have been able to establish that there are many expectations which express the diversity of the worker's social roles and the complexity of the situation in which he is involved. We should therefore not be surprised to find that the workers do not behave simply in accordance with the economic motivations which economists have frequently ascribed to them. Their evaluation of an employment is not the result of a rational calculation, and the attraction of a higher wage cannot of itself motivate the acceptance of change. This is clearly shown in a study by H. S. Parnes (1962) on the question of how far is the worker willing to change employment even within the same town to receive a higher wage. The result shows that he decides on the basis of many reasons other than just the attraction of the wage. The less skilled he is, the more likely he is to reply by refusal. In such a case, job security preponderates in fact over all ther satisfactions. We are thus far from the labour market in which all the workers would be activated only by a search for gain.

Although expectations may define a complex system of preferences they are subject to one objective fact: the situation in the labour market. The reference to unemployment, which is the ultimate basis of all attitudes towards change, indicates this. There may, indeed, be a temptation to contrast two types of behaviour (S. Moscovici, 1961): one which expresses the traditional reference to fear of unemployment and one which refers to the considered acceptance of change as a necessity. These two types of behaviour are not in fact contradictory, for a favourable attitude towards change is objectively conditioned by supply on the labour market. Whatever may be their expectations, the workers of Auburn and Nashua never in practice chose their employment: they took whatever they could find. (L. P. Adams and R. L. Aronson, 1957; C. A. Myers and G. P. Schultz, 1951). Any analysis of resistance must therefore take into account the primary concern for job security which influences workers independently of their expectations and which reflects an actual situation.

A manifestation of this can be seen in the fact that the older worker's concern for occupational continuity may be stronger than the desire to preserve its insertion into the same socio-economic context. The older miner will prefer to leave his area of origin rather than to lose his employment as a miner and the advantages which it brings him (G. Barbichon, and S. Moscovici, 1962). The attitude towards technical change therefore depends first of all on whether or not it allows a secure future in the existing employment.

Technical modernisation thus involves a paradox. Not only does it demand of the less mobile (older) workers that they be the most mobile (for the young ones are encouraged to stay with the firm) but it requires of them an attitude of acceptance while imposing a twofold threat, that of discharge and that of early retirement. For the worker to be able to accept the change despite the twofold threat, it should at least not be presented to him in an authoritarian manner, and his expectations should be taken into account.

2. FREEDOM AND COMPULSION IN CHANGE

Change will appear to be more acceptable if the worker is better informed of its content and is less limited in his expectations. If the motives of voluntary mobility are analysed, it will be seen that the decision to change expresses a desire for occupational or social advancement. It has been seen, indeed, that the worker who decides to leave his employment and to migrate sometimes does not know what employment he will find (C. A. Myers and G. P. Schultz, 1951). This is the reason why such a small part of the labour force is geographically mobile (W. H. Miernyk, 1955; G. Myers and W. R. MacLaurin, 1943). If, however, the worker decides to go, he decides to go of his own accord and is motivated only by his expectations. The case is quite different when the change is imposed on him. Not only can he then resist it because it does not correspond to his expectations, but he may refuse it because it takes from him all freedom of choice and therefore of appreciation.

Any attempt at transfer in an authoritarian manner thus runs into resistance, which indicates not only the strength of certain expectations and certain situations but also the absurdity of enforced mobility. In this connection, the experiment of the transfer of miners in France from the Cevennes and Aquitaine to the Lorraine coal fields is well known (F. Roy, 1957; P. Meuthey, 1956; G.

Barbichon, and S. Moscovici, 1962). In the first place, no information was given to the miners regarding the conditions of their accommodation in Lorraine. The miners selected were nominated arbitrarily, save only that they were chosen among the foreign single men and men who had no family ties in the area. Finally, they were threatened with discharge in the event of refusal. Under such circumstances, the violence of the opposition is understandable. The miners replied with unqualified hostility to the change which was imposed on them with no concern for their expectations. To a refusal to call for their possible voluntary mobility, they responded by refusing to accept enforced mobility. It cannot be doubted that lack of information and compulsion were the causes of this opposition. After the failure of the first imposed transfers, an appeal was made for volunteers. Not only did single men agree to go, but also those with families. 79 per cent of the volunteers from Aquitaine were in fact heads of families.

This example enables us to define another element which gives a meaning to change. It is that it depends on the willingness of certain individuals to move and is not to be suddenly imposed. What is valid for geographical mobility is equally valid for technical mobility. In one case as in the other, information is so much the more necessary the less the change meets individual expectations.

3. CHANGE IN BEHAVIOUR AND BEHAVIOUR TENDING TOWARDS CHANGE

Whatever the resistance, change is a reality. Any worker, however immobile, is aware that working life is being transformed, as is its socio-economic context. His resistance expresses mainly the difficulty of adopting a new attitude towards change when working life has been perceived from the start as a form of compulsion and is related to a given socio-economic context. Everything which has been said in fact suggests that a favourable attitude towards change has little chance of being achieved while expectations remain unchanged. On the other hand, change implies the potential mobility of the worker, that is to say that he is already activated by a behaviour tending towards change.

Even if a behaviour tending towards change cannot be achieved, a relative change in behaviour is possible, by considering other criteria, such as education, for judging occupational success, and by new expectations for the children. If it is impossible to succeed at the parents' level, a new behaviour tending towards change can be achieved by the children.

The importance assigned by workers to education as a condition of occupational and social upward mobility must certainly not be exaggerated. Purely technical qualification often seems most necessary. Nevertheless, it is remarkable that it occupies a privileged position in certain evaluations. Thus, in Springfield, Illinois, 50 per cent of the workers interviewed declared that if they could start their occupational lives again or were obliged to do so, they would like to have a higher level of education (M. W. Herman, 1962). It might be thought that longing for education may often be associated with the feeling of inability to change behaviour and expectations, and the recognition of the need for this change. Concern for the children's future no doubt expresses an identical feeling.

It can be seen, in fact, that miners who resist change for themselves are not opposed to mobility for their children. " The majority of miners would not wish their sons to work in the mine. 44 per cent say that they would advise their sons to look for work outside the area, while only 32 per cent would prefer to leave the area to work in another mine if they were presented with a choice between leaving for another coal field and discharge on the spot " (G. Barbichon, and S. Moscovici, 1962). Change is perceived as the very meaning of the future and is included in expectations. Such expectations, however, are defined too much in relation to a given socio-economic context to be easily altered other than by proxy. The children are therefore encouraged to adopt a behaviour tending towards change. This shows how much the miners can be aware of change and of its inevitability, even though they apparently refuse to consider it other than as a fact and as meaningless.

CONCLUSION

In this section we have aimed at placing attitudes towards change in their overall context. We have introduced the variables which indirectly affect an individual's occupational life—factors such as age, sex, or his socio-economic environment. We intended to demonstrate that attitudes towards change cannot be explained purely on the basis of a work situation, but that they reflect a more complex system of expectations deriving from the individual's plan as a whole.

We consider that this system of expectations could be explained on three levels: individual expectations, the socio-economic environment which determines the individual's expectations, and the meaning of change itself to the individual.

Individual expectations, as affected by age, sex, ethnic background, level of education, etc., produce different attitudes towards the work situation, or more precisely, give different meanings to this situation. In relation to these meanings attitudes towards technical change can take various forms: the change may be regarded primarily in occupational terms (for example, by young people), economic terms (for example, by women) or social terms (for example, by American negroes).

Our analysis demonstrates that the socio-economic environment may assume two forms to the person. It sometimes appears as an external factor and sometimes as an integral part of the individual's own standards. This ambiguity is not accidental. If the change does not come up to his expectations, the individual will be inclined to consider his socio-economic environment as an external factor. But even in this case it is not so much an external factor as a way of behaviour. The conflict between the demands made by change and the existing social standards is the symbolisation of a negative behaviour or of the difficulty of changing behaviour. On the other hand, when the socio-economic environment reinforces prevailing expectations, the individual can then identify the meaning of the change with his own expectations.

These alternative courses reflect two types of orientation—one towards stability, and the other towards socio-economic mobility. These two orientations are always present, whether the environment is considered from the social, economic or cultural angle. One refers essentially to a situation, that is, to former standards, possible unemployment, etc.; the other to a definite plan for personal mobility and the opportunity to attain new standards or new socio-economic status when the change becomes internalised in the expectations. In one case, the individual apparently has a plan of integration which appears dysfunctional when related to the need to adjust to the change, and in the other he plans for occupational or socio-economic promotion. As in the case of the agricultural workers already cited, the smaller the degree of actual integration, the easier adjustment to change will be. Furthermore, these two orientations can, in turn, be interpreted in two ways: in terms of the situation itself, or in terms of the individual's way of integration in the situation.

The contrast between these two orientations demonstrates the difficulty of adopting a third form of behaviour, i.e. to change his project and to move from the first to the second orientation. Scheduling the introduction of technical change might correct this difficulty, but could not solve it. The paradox to which we have already alluded should be recalled in this connection: the workers who are most oriented towards mobility are in fact the ones who are most encouraged to remain stable. The resistance of individuals who, naturally inclined to be immobile, are forced to behave in a manner contrary to their expectations is, therefore, not surprising.

It would, however, be quite erroneous to consider that the contrast between these two orientations is the conflict between modern and traditional. On the one hand, such a contrast will exist only when the change has at least some meaning for them, and does not destroy their desire for occupational and social continuity, even where potentially mobile people are concerned. On the other hand, rejection of change could, in some cases, result in a modern type of claim which would call in question the decision-making process in the whole of society. Indeed, in a situation where the difference between occupational plans and social status is minimal, and where an industry and a region seem to be very closely identified, the individual will naturally be inclined to transform his rejection of change into an attitude of disapproval of the whole development policy. As the change will simultaneously upset every aspect of his existence, he will demand greater rationality in this development and ask to participate in decision-making at the political level. In France, it is not by chance that the trade unions in threatened regions often demand the right to participate in the planning machinery. Opposition, therefore, does not necessarily stem solely from the desire to ignore the demands of industrial society; perhaps it may also stem, as in the case of mobility behaviour, from the desire for rationality in development. We can thereby discern that changes in the method of production are closely linked with the type of social organisation.

GENERAL CONCLUSIONS

GENERAL CONCLUSIONS

I. GENERAL RESULTS

The changes which affect the work situation are not merely individual events, each increasing or diminishing the workers' satisfaction. The evolution of work consists of an endless series of such changes. It is therefore impossible to separate reactions to particular changes from the meaning given to industrial evolution. Moreover, the worker who reacts to a given modification of his working conditions is himself involved in this evolution, so that the meaning he gives to the situation alters with the situation itself. The first general problem which arises, therefore, is how can we avoid splitting up the problem? How can we avoid concentrating solely on studies of satisfaction centred on the individual's balance of contributions and rewards or on description of the evolution of work, of its objective aspects and of the changes in the labour movement?

If these two types of analysis, psychological and historical, are of considerable interest both in themselves and as elements of a sociological analysis, the latter disappears if it is not autonomously defined, that is to say in terms other than those of psychology or history. This is only possible if one considers directly the workers' value orientations and if these are defined as expressing a twofold need, one of creativity and one of control over the products of work.

a) The concrete content of these two requirements can only be defined in terms of the evolution of work. But instead of describing this evolution in material, economic or technical terms, that is to say in terms of mechanisation of productivity, the description should be made in terms of changes in relation of man and his work. Let us briefly recall the observations made on several occasions in this report. The most important fact is the growing interdependence of the various aspects of the work situation. At the start, the occupational and economic situation are separate and the absence of a " bureaucratic " or " functional " system of authority means that organisational problems have almost no autonomous existence. The more industrialisation advances and the more production becomes a complex system of communications and interactions, the more the occupational, organisational and political aspects of the work situation are intermingled. This leads to a first conclusion: the more modern an industrial situation is, the more general are the workers' reactions to a particular change, i.e. the more they express a judgement about their general social situation.

b) But such a conclusion is inadequate, as it leaves the fundamental problems undefined. Does it mean that the occupational or even the organisational problems are absorbed into the more general socio-political problems and that the worker reacts more and more on the basis of his judgement of society as a whole or of the situation he is in? Such a conclusion is surely untenable, and industrial practice shows clearly that neither the theme of the " human factor " in work, nor that of " human relations " tend to be absorbed into a more general analysis, whether this is made in terms of productivity or in terms of social classes. The analysis must therefore be carried further.

At the initial stage of the evolution of industrial work, the strategic centre of work relations and therefore of work attitudes is situated at the level of execution, of direct occupational reality. The workers are seeking to defend their occupational autonomy and to protect their employment, by limiting the supply of work or by fighting against the disastrous consequences of variations in the demand. It is at this level of the individual, the team, or the trade, that one finds the greatest sensitivity and above all a very strong tendency to translate the feelings into concrete action.

The progress of rationalisation and concentration of decisions progressively raises the level of the claims, first to the organisational level and then to the level of the decision-making system. The result is that the problems at the highest level are dealt with less and less ideologically or generally and more and more pragmatically, hence in a way which allows and requires strategy and tactics and no longer simply affirmations or general claims

But what happens to the problems situated below the key-level of attitudes and work relations? One may contend that they become increasingly technical, that is to say, that they lose their ability to stimulate social movements and organised collective action.

The fact that struggles for power are moving upwards towards the level of decision-making is inseparable from the extension of the techniques of work organisation. At the start of the evolution which we are following, these techniques are not social in nature; they are set forth by the engineer, not the psychologist or sociologist. This situation changes, however, when problems of communication, of interpretation of the social system of the factory, of participation or anomie of the workers' play a prominent role.

This evolution is completely parallel to the one which transforms economic analysis. The laws of the market, at first harshly dominant in a liberal economy, are more and more complemented by the principles of structural analysis of the production system. The input-output matrixes are one famous example. Similarly, a " natural " science of communications is developing for the structure of the social relations. The various aspects of the work situation are no longer just indicators of the general power relationships. One sees rather the evolution of occupational roles and the relations between individuals, groups, workshops and services within the firm.

It is not always easy to grasp simultaneously these two apparently opposite trends: on the one side the growing interdependence of the different aspects of the work situation and the growing hold of the " political " problems of the company on its organisational and occupational problems, and on the other side the growing " depolitisation " of the processes of execution and organisation. But the difficulty appears much less if instead of speaking of workers' attitudes or actions in general, a distinction is made between various levels and various forms of social behaviour as we have tried to do in the introduction to this volume.

Insofar as the worker is engaged in power relations and is represented by trade unions, he tries to intervene more and more directly in the decision-making system of the firm or of the economic system as a whole. But at the same time his level of adjustment is more and more directly determined by his situation in the social system of the factory. In the same way his level of satisfaction is more and more directly determined by his individual situation in various primary groups, in his work teams, in his family and in his neighbourhood.

To the extent that alienation becomes more politically defined or defined in terms of the access or non access to power (S. M. Lipset), the problems of satisfaction, adaptation and disalienation tend to become increasingly independent of each other. We have repeatedly observed in this report that trade union action tends to be more and more oriented towards general economic problems, taking less interest than before in the immediate work problems. How is it possible, for example, in view of the massive consequences of automation, to defend the worker's position if not by acting at the level of the economic policy itself and no longer at the level of its occupational consequences.

However, this observation raises an immediate objection. Does not the evolution of collective agreements, in particular in the United States, denote at least a strengthening of job-control, which may finally lead to the " professionalisation " of the workers' world as perceived by Nelson Foote (1953)? Certainly, and this reminds us that " politisation " of the workers' attitudes is by no means a general fact, it is only the normal and regular consequence of the " politisation " of the work problems.

c) In order to refine our analysis, we may distinguish between various types of situations and of industrial societies. Without questioning the conclusions of the last two paragraphs, it must be added that the higher the level at which the social forces act, i.e. the nearer to general political and economic decisions, the more direct and institutionalised is the social control of economic development. This level is higher in societies with an orientation towards planning than in those approaching a liberal model. The institutionalisation of the social relationships of work moves forward above all at the level of the firm in the American case; on the contrary, it is more advanced at the national and State level in the French case. Since the Saltsjöbaden agreements, it is at a national but contractual level in the Swedish case. We may conclude, therefore, that according to the type of industrial society under consideration, it is the problems of satisfaction, of adaption or of disalienation which are the most strongly institutionalised.

The result is that in the type predominating in the United States, where the most general problems are the least institutionalised and where the trade unions are therefore little concerned with doctrine and ideology, the workers react with the desire to organise themselves round ideas borrowed from the field of satisfaction, i.e. from individual life. All this is finally reflected in the weakness of collective reactions to problems of central importance, such as under-employment. Such collective responses tend, in effect, to be merely the sum of individual responses, and at least in the American case, the positive experiences by far outnumber the negative ones. To the extent to which collective responses are nevertheless formed, they rest on the perception of " nonsense ": one feels excluded from the affluent society, one does not feel to belong to an under-privileged class or category, but to an apathetic mass, subject to strong tendencies towards personal and social disintegration. They are sufficient to create " social problems " but too weak to create " social movements ".

Conversely, when the workers' pressure and influence become institutionalised at the highest level, when in particular the trade unions adopt a firm stand on the great economic problems and want to intervene in them, then social movements form more easily. The spheres which are those of satisfaction and adaptation, however, are easily contaminated by " political " pre-occupations, thus creating considerable rigidity in the organisational systems and in the individual attitudes, and hindering negotiations for the improvement of the workers' satisfaction or adaptation. An excellent example of this is given by S. Moscovici in his study about the French miners. His remarks are complemented by those of P. Belleville (1963). For the miners, the nationalization of the coal mines denoted a step forward towards a " workers' power ", conceived in the spirit of revolutionary trade-unionism. The disillusion stemming from the failure of this hope, the maintenance and even strengthening of a centralised and autocratic decision system which leaves the firm hardly any room for initiative, have led to a situation where the workers at the same time strongly favour nationalisation and are discontented with their individual situation in a nationalised industry. More generally, various surveys carried out in France between 1955 and 1958, i.e. in a period of economic expansion and of a rise in the standard of living, have shown the persistence of a deep pessimism and the nostalgia for a mythical past. This indicates at least that very general reasons have created an unfavourable climate, determining the reactions to a given situation, which was no worse than in neighbouring countries where it led to less negative judgements.

If, finally, one considers an intermediate situation like the Scandinavian one in which the problems both of adaptation and of organisation take the first place, one sees again, but to a lesser degree, a tendency towards negative individual balances, which can express themselves in agitation and wild-cat strikes. One can also find a certain disorganisation of social movements themselves, but the level of adjustment to the social system of the factory is unusually high.

These short remarks may show that workers' reactions to a given situation or to a change of a particular situation depend directly both on the work situation and on the attitudes and the orientations towards this situation. It is always possible and useful for the sociologist to analyse separately the problems of dissatisfaction, of maladjustment and of alienation, but one cannot refrain from asking how these three dimensions of workers' attitudes are combined, and their combinations cannot be understood except by reference to the general state of the industrial society under consideration.

II. THE CHANGES AND THE FIRM

Let us now leave this general level of discussion and return again to the more concrete framework in which most decisions affecting the work situation in the firm are taken.

Though the cause of the changes is often to be found outside the firm, these changes appear as the effect of decisions taken autonomously by the firm, simply because it " organises " them at the same time as it chooses them. This means that a firm has at the same time a political and an administrative system or, more precisely, that it has an instrumental function of innovation or adaptation to the outside world, and an integrating function in respect to its own elements. How do the relationships which are established between these two functions and the requirements they include affect the workers' reactions to change?

a) If a firm is primarily instrumental in its orientation, that is to say, if it is oriented towards change, it is necessary for it to leave individuals a fairly broad margin of autonomy. Indeed, change creates strong tensions in the organisation. It splits primary solidarities and requires in return a " rugged individualism ". This means that the weak integration of the social system leads everyone to look for very individual rewards, such as wages, promotion, social mobility, but also for very general social rewards like the consciousness of participation in progress or in the pioneer spirit. This combination of immediate individual interests and social idealism is characteristic of developing societies, of capitalist employers and of stakhanovist workers. The important thing for the individual is, at the same time, to have a considerable freedom to manœuvre in the organisation and to internalise the general values. One finds here the famous definition of innovation as given by Merton.

In this situation, changes are better accepted the more they preserve the individual's initiative, which means both that the person must be able to establish a very personal balance of satisfaction and to justify his acceptance of change by the meaning it has for him as a member of society rather than of a particular firm or organisation. This is what gives social mobility its importance. In another publication (A. Touraine and O. Ragazzi, 1961) we used the term " preventive a-socialisation " for the process where an individual does not identify himself with his work situation because he is oriented towards his own further upward mobility. This marginality allows the worker of rural origin to adapt more easily and to suffer less from the special conditions of industrial work, as they appear to him to be the symbol of his entry into the urban economy and his social rise.

The changes most difficult to accept are those which threaten this consciousness of initiative, i.e. those which strengthen the group's hold over the individual and try to develop his identification with the team, the shop or the firm. Sensitivity to the wage system is greater in such a situation than sensitivity to the material conditions of work, simply because, in a purely personal frame of reference, material difficulties do not have as much impact as social constraints.

b) The converse is true when the firm is more oriented towards its integration than towards change. In that case, the material conditions of work take on a symbolic meaning, indicating one's status in the firm, and affecting an informal group which plays as important a role for the workers as the peer group plays for adolescents.

A change is the more difficult to accept as it threatens the level and the coherence of the worker's status more directly. Sensitivity to change appears sharper among those who are most strongly integrated in the firm, whereas in the preceding case it would be stronger among those who are most strongly involved in the personal expectations.

The opposition of these two situations largely determines the effects of command on the workers' attitudes. The integration of their work group is not the only function of the foremen. A. C. Hamblin (1963), for example, recalled that the foremen's technical and organisational tasks are often underestimated by sociologists. To use other terms, foremen are used at the same time to mediate between the workers and the general orientations of the firm, and as an integrating element of a particular work unit. Here lies the difficulty of their position. On the one hand, they must increase transparency in the firm and the ease of vertical communications, on the other hand, they must maintain a necessary opacity, an autonomy in the organisation of their team or their shop. They must at the same time be democratic and active, integrative and instrumental. The difficulty lies in the fact that in an instrumentally oriented firm, whose workers share this type of orientation, the foremen, and more generally the supervisors, have to insist on the need for integration. Conversely, if they act in this way in a firm already oriented towards integration, they risk increasing the bureaucratic rigidity of the organisation.

Posed in its simplest form, the problem is therefore that of the relations between the workers, the foremen and management. If the workers' orientation differs from that of the foreman and also from that of management, the attitudes towards change tend to be marked by a suspicious withdrawal where the workers are oriented towards integration, and by agressiveness, often leading to separation or conflict where they are oriented towards achievement values.

It would be desirable that oriented conflicts occur more between foremen and management than between foremen and workers, simply because a group is the more able to deal with these disagreements the nearer it is to power, and hence the more it is able to bring into play the mechanisms liable to remedy the negative effects of such conflicts.

As the foremen belong to management—and this more and more so—this case is the most frequent. Management's arbitration possibilities must therefore be considered in more detail. They are the greater the less management is integrated, i.e. the more it is itself divided into technicians and executives, a duality which necessitates the formation of a real power of arbitration, represented by top management. This problem receives the greatest attention today (T. Burns and G. M. Stalker, 1961). The workers' reactions towards change depend on the way in which the leadership of the firm is itself suited to change, i.e. the extent to which it is able to arbitrate between the opposing requirements of innovation and continuity, of adaptation and integration.

The important thing is, therefore, that the workers, whatever their orientation, can appeal against the reactions of the foremen or even of the upper executive levels. If the arbitration system is too weak, the firm risks being torn from top to bottom by a conflict opposing the workers and the " staff " members to the foremen and to " line " supervisors. If, on the contrary, top management is too centralised and too autocratic, conflicts become fragmented, but, at the same time more bitter, and can lead to a fragmentation of the whole firm and to a general resistance to change. Management in such a situation has no other resource than the development of what A. Gouldner calls a repressive bureaucracy, that is to say, regulations which break up the social relations in the firm.

These observations have taken us a fairly long way from the naïve imagery of " human relations " as it appears in the ideology of certain managers. If one considers only the integration needs of the firm, one risks an increasing resistance to change. Good human relations can foster routine as much as the defence of a traditional status. Certainly, the problem would not exist if the firm was a purely voluntary organisation, governed solely by a disinterested search for economic development, but this is a Utopian model which omits the problems which every organisation, even a religious one, faces, and which arise from the fact that a system of means is never completely identified with the ends justifying its existence.

One cannot speak of resistance to change without knowing against what this resistance is directed. Is it a refusal of the ends or a refusal of the system of means; is it inspired by mistrust of the firm or indifference to innovation? It is tempting for all who have to take decisions to identify themselves with society and to accuse those who resist them of apathy, routine or narrow-minded individualism. It is, however, only possible to deal with resistance to change if one recognises the validity of orientations which surpass it, either because they are centred on the individual or because they aim directly at certain social values, like technical or economic rationality, which cannot be fully realised in the firm, as it is only a specific organisation with its own interests. Workers' attitudes towards a change therefore cannot be understood independently of the way in which the firm itself behaves towards this change.

The purpose of these observations is not to complicate practical recommendations but on the contrary to free them from the dangers inherent in too general a way of looking at resistance to change.

III. PROPOSALS

a) The simplest practical conclusion which stands out from the studies analysed in this report is that a change is rarely an event which can be isolated, so that a general definition of the best way of introducing it cannot be made. It is not a material reality, not an object whose dimensions and weight, and hence the means for its use, can be defined. It is a social fact, and its introduction changes the meaning of the situation in which it arises. In the most extreme case, one must say that it is impossible to evaluate the consequences of a change. Judgement alters at the same time as the situation, and the worker who judges the consequences is not the same as the one who initiated or anticipated them. This remark, quite excessive if taken literally, aims to recall the very principle of our analyses. It is not possible to separate changes in work from the evolution of work, or attitudes towards change from the change in attitudes.

b) It is still true that any change is a particular event which can be identified and isolated. This governs a certain amount of very simple practical counsels which are, however, far from being always respected. The nature, the causes and the consequences of a change must, in fact, be known by all those who undergo or participate in it. This is essentially an information problem, and it is the more difficult to solve the less the decisions leading to a change are taken rationally, in full knowledge of the causes. Furthermore, these decisions do not always aim at progress of technical and economic rationality. But, whatever the causes of the change may be, its boundaries must be defined. S. Moscovici showed clearly (1961) that the most worried workers were those who found themselves " in mid-stream ", those who occupationally or personally felt already separated from the old situation and not yet attached to a new occupational life or new social ties. Their pessimism was the first expression of their anxiety. The information, to be effective, must be in accordance with the social psychologists' observations. These, particularly since the work of Kurt Lewin, have shown that a change in attitudes was more easily obtained if proposed by social channels near to the individual, i.e. affecting him in roles important to him. Wherever the work group is a reality, it is essential for the information to be concretely collective, i.e. engage the group's social life, allowing everyone, or in any case the greatest possible number, to participate in the information or at least to receive it.

This active information strategy is easier if the change appears to have an objective foundation, i.e. if it appears to be the response of the organisation to an external pressure, such as technical progress, a new market situation, employment conditions, and so forth. At this first level of analysis, the change must, therefore, appear more as a necessity than as a decision, which could lead to guile, but which in the majority of cases relies on a real situation, both because the aim of many changes is modernisation and because a firm, however large, is subject to the pressure of its economic environment.

c) Beyond these preliminary problems, the main problem is, however, to know what one is trying to obtain: should the change be tolerated, accepted or desired? These terms do not only show the different levels of adherence from resigned passivity to action. They correspond in fact to the three types of concern which we defined at the start: satisfaction, adaptation and disalienation.

The more one tries to maintain or increase individual satisfaction, the more useful it is to isolate change from its ins and outs, to enable simple comparisons to be made between situations before and after the change. In wanting to widen the problem, to justify a particular change in the name of general principles, one can only complicate the attainment of individual satisfaction. It is quite useless to speak of progress and productivity to convince individuals that they will earn a little bit more or that they will have to operate a new machine requiring less muscular effort but more continuous attention.

Of course, it is not the nature of change which is in question here, but much more the attitudes of the workers concerned and the policy of the company's management. It is not possible to say in general whether such a treatment of the problems is good or bad. One can only suggest that in principle it suits a situation in which the workers react mainly in terms of personal satisfaction, where the change is limited and " technical ", and where the management does not intend to call into question the state of the social relationships in the firm.

If the problems arise at a higher, more collective level, it is not enough to try to maintain or increase individual satisfactions. The change must be justified by a better functioning of the organisation, which makes it necessary to widen the information and even to insert the change in a visible process of transformation of this functioning. This brings different actors into play, no longer only the workers and the foremen but the higher executives as well as the workers' representatives or the trade union organisation.

Finally, if one stands at the highest level, and if a positive attitude towards change is asked for or expected, the change must be considered in an even broader perspective. It must be evaluated by the workers, not insofar as they are placed in a concrete, personal work situation, not even insofar as they are placed in a system of social relationships at work in the organisation, but insofar as they refer to a certain " whole ", whether this is their work life or the situation of their social group in society.

The change must therefore alter more than just the functioning of communications and social relations, and visibly transform the system of authority and power. It even happens that a trade union organisation accepts a change, the consequences of which do not always appear positive to it, if the way in which the change is introduced increases its bargaining power, or more generally its influence.

It is not difficult to distinguish these three situations in theory; it is much more difficult to place a concrete case in one of these types. Indeed, we have seen that the workers' attitudes, management's intentions and the nature of the change are three variables, independent enough from each other in a concrete situation to offer the attributes of several types of theoretical situation.

As it is here no longer a question of continuing the analysis, but of defining practical conclusions, one can only say that it is extremely important for any firm not only to operate in as homogeneous a way as possible, but above all to be capable of functioning at several different levels. This constitutes a problem which is often purely practical, i.e. which level of management will be responsible for introducing the change, which spokesmen will be chosen, and what type of information will be given?

If these recommendations were enough to solve all the problems, sociological analysis would be of very little use, but it also has to separate the real problems from the false, to say what can be solved " in the present state of things " and what requires a modification of this state. It is dangerous to call on the loyalty or national feeling of a worker or a civil servant to make him accept a change which he judges as a loss in wages or an increase in skill. If the balance of satisfactions is negative, it is no use calling on more collective attitudes to compensate for this dissatisfaction, unless one can agree to take a stand on a higher and more comprehensive level of behaviour, i.e. at least to modify the functioning of the organisation and often also to modify the relations of authority and power in this organisation. It is not given to all to be able to ask for the self-sacrifice of a generation or an individual.

Conversely, appealing to individual interests can lead to unfavourable and unexpected consequences if the situation in which one intervenes in this way is at a higher level than that at which everything is defined in terms of satisfaction. Many strikes, economically unprofitable to wage earners, are adequate proof of this.

These practical conclusions tie up with the observations we made at the start; industrial evolution does not merely lead to the growing importance of the problems of the highest level. On the contrary, it involves a greater autonomy of the problems of execution, organisation and direction of work. This growing complexity requires that every firm of whatever kind, endows itself with a system for analysing its situation which allows a definition to be made, both of the problems which it faces and the ways or means of dealing with these problems. But it would be contradictory to think that such an operation could be carried out in an authoritarian way by any power of decision, which would always be in such a case both judge and interested party. The study of workers' attitudes with regard to change is inseparable from a more general analysis of the policies of management and thus necessarily leads to the more general theme of the representation, in the firm and at a higher level, of the interests and social forces which are affected by these changes, in other words, to the problems of industrial democracy.

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